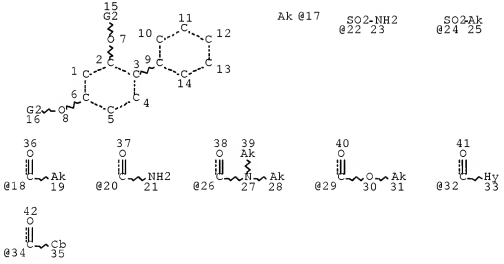
When nA is 0:

```
=> fil cap
FILE 'CAPLUS' ENTERED AT 12:21:07 ON 24 DEC 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)
```

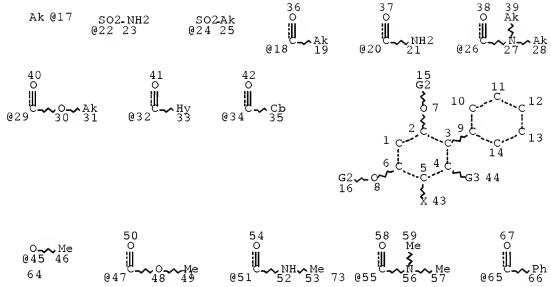


```
FILE COVERS 1907 - 24 Dec 2008  VOL 149 ISS 26
FILE LAST UPDATED: 23 Dec 2008  (20081223/ED)

Caplus now includes complete International Patent Classification (IPC)
reclassification data for the third quarter of 2008.

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/legal/infopolicy.html

=> d que l18
L1                STR
```

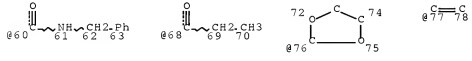



```
VAR G2=H/17/18/20/22/24/26/29/32/34
NODE ATTRIBUTES:
CONNECT IS E2  RC AT   1
CONNECT IS X4  RC AT  19
CONNECT IS X4  RC AT  25
CONNECT IS X4  RC AT  28
```

```
CONNECT IS X4  RC AT  31
CONNECT IS E1  RC AT  33
CONNECT IS X4  RC AT  35
CONNECT IS X4  RC AT  39
DEFAULT MLEVEL IS ATOM
GGCAT   IS LOC  UNS  AT  17
GGCAT   IS LOC  SAT  AT  19
GGCAT   IS LOC  SAT  AT  25
GGCAT   IS LOC  SAT  AT  28
GGCAT   IS LOC  SAT  AT  31
GGCAT   IS UNS  AT  35
GGCAT   IS LOC  SAT  AT  39
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC   6   9
NUMBER OF NODES IS  42

STEREO ATTRIBUTES: NONE
L3          869 SEA FILE=REGISTRY SSS FUL L1
L7              STR
```

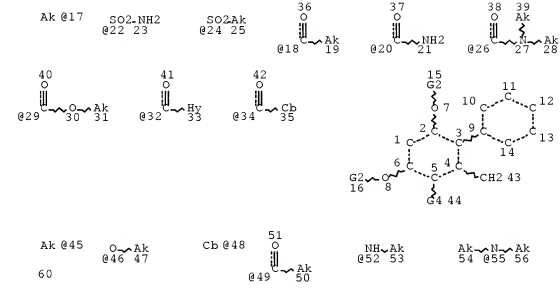


Page 1-A




```
Page 2-A
VAR G2=H/17/18/20/22/24/26/29/32/34
VAR G3=OH/45/COOH/47/20/51/55/60/65/68/76/77
NODE ATTRIBUTES:
CONNECT IS E2  RC AT   1
CONNECT IS X4  RC AT  19
```

```
CONNECT IS X4  RC AT  25
CONNECT IS X4  RC AT  28
CONNECT IS X4  RC AT  31
CONNECT IS E1  RC AT  33
CONNECT IS X4  RC AT  35
CONNECT IS X4  RC AT  39
CONNECT IS E2  RC AT  73
CONNECT IS E2  RC AT  74
CONNECT IS E3  RC AT  76
DEFAULT MLEVEL IS ATOM
GGCAT   IS LOC  UNS  AT  17
GGCAT   IS LOC  SAT  AT  19
GGCAT   IS LOC  SAT  AT  25
GGCAT   IS LOC  SAT  AT  28
GGCAT   IS LOC  SAT  AT  31
GGCAT   IS UNS  AT  35
GGCAT   IS LOC  SAT  AT  39
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC   6   9
NUMBER OF NODES IS  78

STEREO ATTRIBUTES: NONE
L9            15 SEA FILE=REGISTRY SUB=L3 SSS FUL L7
L10            2 SEA FILE=CAPLUS SPE=ON  ABB=ON  PLU=ON  L9
L12              STR
```



Page 1-A

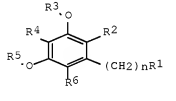
Page 2-A
VAR G2=H/17/18/20/22/24/26/29/32/34

```
VAR G4=H/X/CN/NO2/45/46/48/49/NH2/52/55/COOH/57/61/63/64/66
NODE ATTRIBUTES:
CONNECT IS E2  RC AT   1
CONNECT IS X4  RC AT  19
CONNECT IS X4  RC AT  25
CONNECT IS X4  RC AT  28
CONNECT IS X4  RC AT  31
CONNECT IS E1  RC AT  33
CONNECT IS X4  RC AT  35
CONNECT IS X4  RC AT  39
CONNECT IS X4  RC AT  45
CONNECT IS X4  RC AT  47
CONNECT IS X4  RC AT  48
CONNECT IS X4  RC AT  50
CONNECT IS E1  RC AT  53
CONNECT IS E1  RC AT  54
CONNECT IS E1  RC AT  56
CONNECT IS X4  RC AT  59
CONNECT IS X4  RC AT  62
CONNECT IS X5  RC AT  63
CONNECT IS E2  RC AT  64
CONNECT IS X4  RC AT  65
CONNECT IS E2  RC AT  66
CONNECT IS X4  RC AT  67
DEFAULT MLEVEL IS ATOM
GGCAT   IS LOC  UNS  AT  17
GGCAT   IS LOC  SAT  AT  19
GGCAT   IS LOC  SAT  AT  25
GGCAT   IS LOC  SAT  AT  28
GGCAT   IS LOC  SAT  AT  31
GGCAT   IS UNS  AT  35
GGCAT   IS LOC  SAT  AT  39
GGCAT   IS LOC  AT  45
GGCAT   IS LOC  SAT  AT  47
GGCAT   IS SAT  AT  48
GGCAT   IS LOC  SAT  AT  50
GGCAT   IS LOC  SAT  AT  53
GGCAT   IS LOC  SAT  AT  54
GGCAT   IS LOC  SAT  AT  56
GGCAT   IS LOC  SAT  AT  59
GGCAT   IS UNS  AT  62
GGCAT   IS UNS  AT  63
GGCAT   IS SAT  AT  64
GGCAT   IS UNS  AT  65
GGCAT   IS SAT  AT  66
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC   6   9
NUMBER OF NODES IS  67

STEREO ATTRIBUTES: NONE
L14          322 SEA FILE=REGISTRY SUB=L3 SSS FUL L12
L15           39 SEA FILE=CAPLUS SPE=ON  ABB=ON  PLU=ON  L14
L17            1 SEA FILE=CAPLUS SPE=ON  ABB=ON  PLU=ON  L10 AND L15
L18            2 SEA FILE=CAPLUS SPE=ON  ABB=ON  PLU=ON  L17 OR L10


=> d l18 ibib abs hitstr tot
```

L18 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:612072 CAPLUS Full-text
DOCUMENT NUMBER: 143:146661
TITLE: Hsp90 family protein inhibitor
INVENTOR(S): Kitamura, Yushi; Nara, Shinji; Nakagawa, Hiroshi; Nakatsu, Rieko; Nakashima, Takayuki; Soga, Shiro; Kajita, Jiro; Shiotsu, Yukimasa; Kanda, Yutaka
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan
SOURCE: PCT Int. Appl., 311 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063222	A1	20050714	WO 2004-JP19742	20041224
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1704856	A1	20060927	EP 2004-808092	20041224
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
US 20070155813	A1	20070705	US 2006-584234	20060626
PRIORITY APPLN. INFO.:			JP 2003-432776 A	20031226
			WO 2004-JP19742 W	20041224

OTHER SOURCE(S): MARPAT 143:146661
GI



I

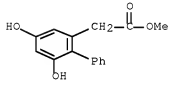
AB A Hsp90 family protein inhibitor which contains as an active ingredient a benzene derivative represented by the following general formula (I), a prodrug thereof, or a pharmacol. acceptable salt of either.

IT 860151-78-6P 860151-80-0P 860151-83-3P
860151-86-6P 860151-87-7P 860151-88-8P
860151-90-2P 860151-92-4P 860151-94-6P
860151-96-8P 860151-98-0P 860152-00-7P
860152-01-8P 860152-03-0P 860152-04-1P
860152-05-2P 860152-06-3P 860152-07-4P

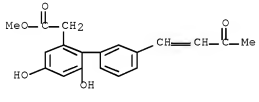
860152-08-5P 860152-09-6P 860152-10-9P
860152-11-0P 860152-12-1P 860152-13-2P
860152-14-3P 860152-15-4P 860152-16-5P
860152-17-6P 860152-18-7P 860152-19-8P
860152-20-1P 860152-21-2P 860152-22-3P
860152-23-4P 860152-24-5P 860152-25-6P
860152-26-7P 860152-27-8P 860152-28-9P
860152-29-0P 860152-30-3P 860152-31-4P
860152-32-5P 860152-33-6P 860152-34-7P
860152-35-8P 860152-36-9P 860152-37-0P
860152-38-1P 860152-39-2P 860152-40-5P
860152-41-6P 860152-42-7P 860152-43-8P
860152-44-9P 860152-45-0P 860152-46-1P
860152-47-2P 860152-48-3P 860152-49-4P
860152-50-7P 860152-51-8P 860152-52-9P
860152-53-0P 860152-54-1P 860152-55-2P
860152-56-3P 860152-57-4P 860152-58-5P
860152-59-6P 860152-60-9P 860152-61-0P
860152-62-1P 860152-63-2P 860152-64-3P
860152-65-4P 860152-66-5P 860152-67-6P
860152-68-7P 860152-69-8P 860152-70-1P
860152-71-2P 860152-72-3P 860152-73-4P
860152-74-5P 860152-75-6P 860152-76-7P
860152-77-8P 860152-78-9P 860152-79-0P
860152-80-3P 860152-81-4P 860152-82-5P
860152-83-6P 860152-84-7P 860152-85-8P
860152-87-0P 860152-88-1P 860152-89-2P
860152-90-5P 860152-91-6P 860152-92-7P
860152-93-8P 860152-94-9P 860152-95-0P
860152-96-1P 860152-98-3P 860152-99-4P
860153-00-0P 860153-01-1P 860153-02-2P
860153-03-3P 860153-04-4P 860153-05-5P
860153-06-6P 860153-07-7P 860153-08-8P
860153-09-9P 860153-10-2P 860153-11-3P
860153-12-4P 860153-13-5P 860153-15-7P
860153-16-8P 860153-17-9P 860153-18-0P
860153-19-1P 860153-20-4P 860153-21-5P
860153-22-6P 860153-23-7P 860153-24-8P
860153-25-9P 860153-26-0P 860153-27-1P
860153-28-2P 860153-29-3P 860153-30-6P
860153-31-7P 860153-32-8P 860153-33-9P
860153-35-1P 860153-36-2P 860153-37-3P
860153-38-4P 860153-39-5P 860153-40-6P
860153-41-9P 860153-42-0P 860153-43-1P
860153-44-2P 860153-45-3P 860153-46-4P
860153-47-5P 860153-48-6P 860153-49-7P
860153-50-0P 860153-51-1P 860153-52-2P
860153-53-3P 860153-54-4P 860153-55-5P
860153-56-6P 860153-57-7P 860153-58-8P
860153-59-9P 860153-60-2P 860153-61-3P
860153-62-4P 860153-63-5P 860153-64-6P
860153-65-7P 860153-66-8P 860153-67-9P
860153-68-0P 860153-69-1P 860153-70-4P
860153-71-5P 860153-72-6P 860153-73-7P
860153-74-8P 860153-75-9P 860153-76-0P
860153-77-1P 860153-78-2P 860153-79-3P
860153-80-6P 860153-81-7P 860153-82-8P
860153-83-9P 860153-84-0P 860153-85-1P
860153-86-2P 860153-87-3P 860153-88-4P
860153-89-5P 860153-90-6P 860153-91-9P

860153-92-0P 860153-93-1P 860153-94-2P
860153-95-3P 860153-96-4P 860153-97-5P
860153-98-6P 860153-99-7P 860154-00-3P
860154-01-4P 860154-03-6P 860154-04-7P
860154-05-8P 860154-06-9P 860154-07-0P
860154-08-1P 860154-09-2P 860154-10-5P
860154-11-6P 860154-12-7P 860154-13-8P
860154-14-9P 860154-15-0P 860154-16-1P
860154-18-3P 860154-19-4P 860154-20-7P
860154-66-1P 860154-67-2P 860154-68-3P
860154-69-4P 860154-70-7P 860154-71-8P
860154-72-9P 860154-73-0P 860154-74-1P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(benzene derivs. as Hsp90 family protein inhibitors and antitumor agents)

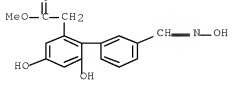
RN 860151-78-6 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-, methyl ester (CA INDEX NAME)



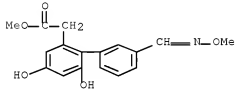
RN 860151-80-0 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3'-(3-oxo-1-buten-1-yl)-, methyl ester (CA INDEX NAME)



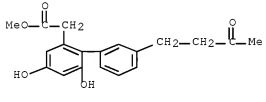
RN 860151-83-3 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3'-[(hydroxyimino)methyl]-, methyl ester (CA INDEX NAME)



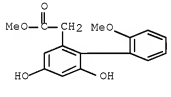
RN 860151-86-6 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3'-[(methoxyimino)methyl]-, methyl ester (CA INDEX NAME)



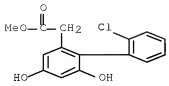
RN 860151-87-7 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3'-(3-oxobutyl)-, methyl ester (CA INDEX NAME)



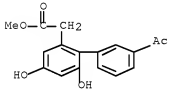
RN 860151-88-8 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-2'-methoxy-, methyl ester (CA INDEX NAME)



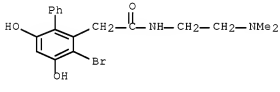
RN 860151-90-2 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 2'-chloro-4,6-dihydroxy-, methyl ester (CA INDEX NAME)



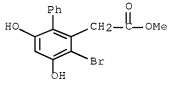
RN 860151-92-4 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 3'-acetyl-4,6-dihydroxy-, methyl ester (CA INDEX NAME)



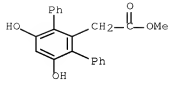
RN 860151-94-6 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-N-[2-(dimethylamino)ethyl]-4,6-dihydroxy- (CA INDEX NAME)



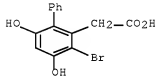
RN 860151-96-8 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 3-bromo-4,6-dihydroxy-, methyl ester (CA INDEX NAME)



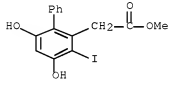
RN 860151-98-0 CAPLUS
CN [1,1':3',1''-Terphenyl]-2'-acetic acid, 4',6'-dihydroxy-, methyl ester (9CI) (CA INDEX NAME)



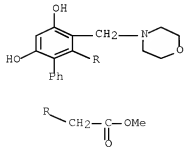
RN 860152-00-7 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 3-bromo-4,6-dihydroxy- (CA INDEX NAME)



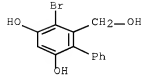
RN 860152-01-8 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3-iodo-, methyl ester (CA INDEX NAME)



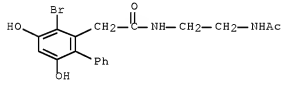
RN 860152-03-0 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3-(4-morpholinylmethyl)-, methyl ester (CA INDEX NAME)



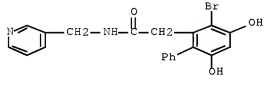
RN 860152-04-1 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-(hydroxymethyl)- (CA INDEX NAME)



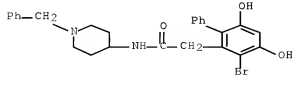
RN 860152-05-2 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, N-[2-(acetylamino)ethyl]-3-bromo-4,6-dihydroxy- (CA INDEX NAME)



RN 860152-06-3 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-(3-pyridinylmethyl)- (CA INDEX NAME)

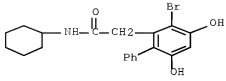


RN 860152-07-4 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-[1-(phenylmethyl)-4-piperidinyl]- (CA INDEX NAME)

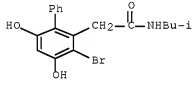


RN 860152-08-5 CAPLUS

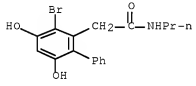
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-N-cyclohexyl-4,6-dihydroxy- (CA INDEX NAME)



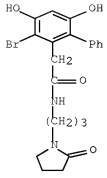
RN 860152-09-6 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-(2-methylpropyl)- (CA INDEX NAME)



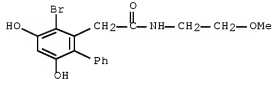
RN 860152-10-9 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-propyl- (CA INDEX NAME)



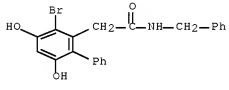
RN 860152-11-0 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-[3-(2-oxo-1-pyrrolidinyl)propyl]- (CA INDEX NAME)



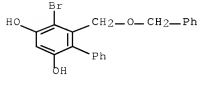
RN 860152-12-1 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-(2-methoxyethyl)- (CA INDEX NAME)



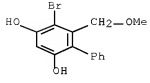
RN 860152-13-2 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-(phenylmethyl)- (CA INDEX NAME)



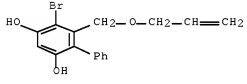
RN 860152-14-3 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[(phenylmethoxy)methyl]- (CA INDEX NAME)



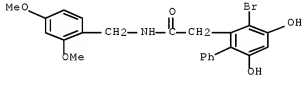
RN 860152-15-4 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-(methoxymethyl)- (CA INDEX NAME)



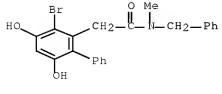
RN 860152-16-5 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[(2-propen-1-yloxy)methyl]- (CA INDEX NAME)



RN 860152-17-6 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-N-[(2,4-dimethoxyphenyl)methyl]-4,6-dihydroxy- (CA INDEX NAME)

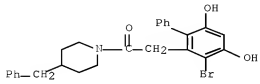


RN 860152-18-7 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-methyl-N-(phenylmethyl)- (CA INDEX NAME)

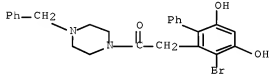


RN 860152-19-8 CAPLUS

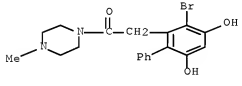
CN Ethanone, 2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-1-[4-(phenylmethyl)-1-piperidinyl]- (CA INDEX NAME)



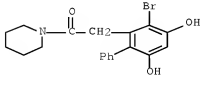
RN 860152-20-1 CAPLUS
CN Ethanone, 2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-1-[4-(phenylmethyl)-1-piperazinyl]- (CA INDEX NAME)



RN 860152-21-2 CAPLUS
CN Ethanone, 2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-1-(4-methyl-1-piperazinyl)- (CA INDEX NAME)

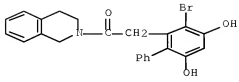


RN 860152-22-3 CAPLUS
CN Ethanone, 2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-1-(1-piperidinyl)- (CA INDEX NAME)

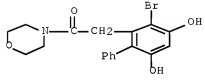


RN 860152-23-4 CAPLUS
CN Ethanone, 2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-1-(3,4-dihydro-

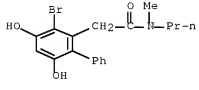
2(1H)-isoquinolinyl)- (CA INDEX NAME)



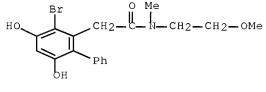
RN 860152-24-5 CAPLUS
CN Ethanone, 2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-1-(4-morpholinyl)-
(CA INDEX NAME)



RN 860152-25-6 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-methyl-N-propyl- (CA
INDEX NAME)

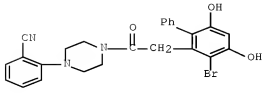


RN 860152-26-7 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-(2-methoxyethyl)-N-
methyl- (CA INDEX NAME)

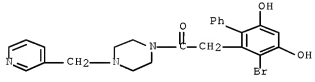


RN 860152-27-8 CAPLUS
CN Benzonitrile, 2-[4-[2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)acetyl]-1-

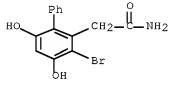
piperazinyl]- (CA INDEX NAME)



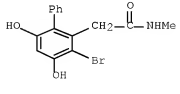
RN 860152-28-9 CAPLUS
CN Ethanone, 2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-1-[4-(3-pyridinylmethyl)-1-piperazinyl]- (CA INDEX NAME)



RN 860152-29-0 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy- (CA INDEX NAME)

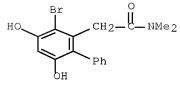


RN 860152-30-3 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-methyl- (CA INDEX NAME)

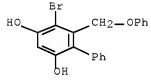


RN 860152-31-4 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N,N-dimethyl- (CA

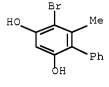
INDEX NAME)



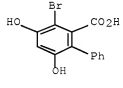
RN 860152-32-5 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-(phenoxymethyl)- (CA INDEX NAME)



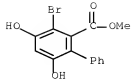
RN 860152-33-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-methyl- (CA INDEX NAME)



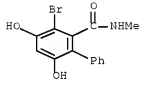
RN 860152-34-7 CAPLUS
CN [1,1'-Biphenyl]-2-carboxylic acid, 3-bromo-4,6-dihydroxy- (CA INDEX NAME)



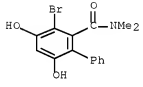
RN 860152-35-8 CAPLUS
CN [1,1'-Biphenyl]-2-carboxylic acid, 3-bromo-4,6-dihydroxy-, methyl ester
(CA INDEX NAME)



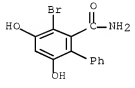
RN 860152-36-9 CAPLUS
CN [1,1'-Biphenyl]-2-carboxamide, 3-bromo-4,6-dihydroxy-N-methyl- (CA INDEX NAME)



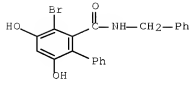
RN 860152-37-0 CAPLUS
CN [1,1'-Biphenyl]-2-carboxamide, 3-bromo-4,6-dihydroxy-N,N-dimethyl- (CA INDEX NAME)



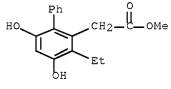
RN 860152-38-1 CAPLUS
CN [1,1'-Biphenyl]-2-carboxamide, 3-bromo-4,6-dihydroxy- (CA INDEX NAME)



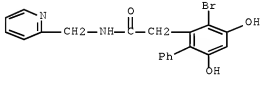
RN 860152-39-2 CAPLUS
CN [1,1'-Biphenyl]-2-carboxamide, 3-bromo-4,6-dihydroxy-N-(phenylmethyl)- (CA INDEX NAME)



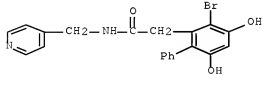
RN 860152-40-5 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 3-ethyl-4,6-dihydroxy-, methyl ester (CA INDEX NAME)



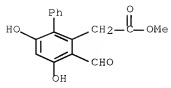
RN 860152-41-6 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-(2-pyridinylmethyl)- (CA INDEX NAME)



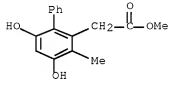
RN 860152-42-7 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-(4-pyridinylmethyl)- (CA INDEX NAME)



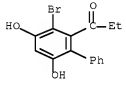
RN 860152-43-8 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 3-formyl-4,6-dihydroxy-, methyl ester (CA INDEX NAME)



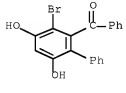
RN 860152-44-9 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3-methyl-, methyl ester (CA INDEX NAME)



RN 860152-45-0 CAPLUS
CN 1-Propanone, 1-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)- (CA INDEX NAME)

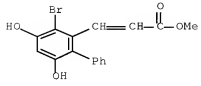


RN 860152-46-1 CAPLUS
CN Methanone, (3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)phenyl- (CA INDEX NAME)

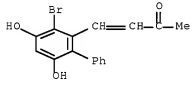


RN 860152-47-2 CAPLUS
CN 2-Propenoic acid, 3-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-, methyl

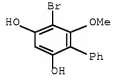
ester (CA INDEX NAME)



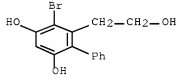
RN 860152-48-3 CAPLUS
CN 3-Buten-2-one, 4-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



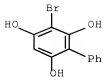
RN 860152-49-4 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-methoxy- (CA INDEX NAME)



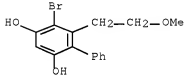
RN 860152-50-7 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-(2-hydroxyethyl)- (CA INDEX NAME)



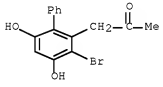
RN 860152-51-8 CAPLUS
CN [1,1'-Biphenyl]-2,4,6-triol, 3-bromo- (CA INDEX NAME)



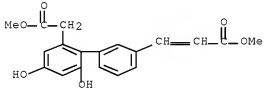
RN 860152-52-9 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-(2-methoxyethyl)- (CA INDEX NAME)



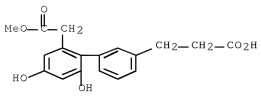
RN 860152-53-0 CAPLUS
CN 2-Propanone, 1-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



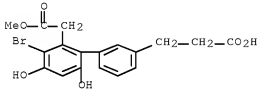
RN 860152-54-1 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3'-(3-methoxy-3-oxo-1-propen-1-yl)-, methyl ester (CA INDEX NAME)



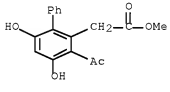
RN 860152-55-2 CAPLUS
CN [1,1'-Biphenyl]-3-propanoic acid, 2',4'-dihydroxy-6'-(2-methoxy-2-oxoethyl)- (CA INDEX NAME)



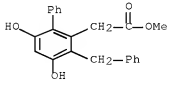
RN 860152-56-3 CAPLUS
CN [1,1'-Biphenyl]-3-propanoic acid, 3'-bromo-4',6'-dihydroxy-2'-(2-methoxy-2-oxoethyl)- (CA INDEX NAME)



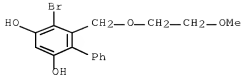
RN 860152-57-4 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 3-acetyl-4,6-dihydroxy-, methyl ester (CA INDEX NAME)



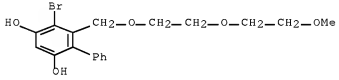
RN 860152-58-5 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3-(phenylmethyl)-, methyl ester (CA INDEX NAME)



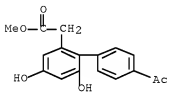
RN 860152-59-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[(2-methoxyethoxy)methyl]- (CA INDEX NAME)



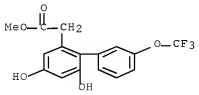
RN 860152-60-9 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[[2-(2-methoxyethoxy)ethoxy]methyl]-
(CA INDEX NAME)



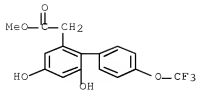
RN 860152-61-0 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4'-acetyl-4,6-dihydroxy-, methyl ester (CA
INDEX NAME)



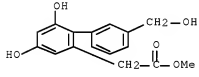
RN 860152-62-1 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3'-(trifluoromethoxy)-,
methyl ester (CA INDEX NAME)



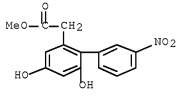
RN 860152-63-2 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-4'-(trifluoromethoxy)-,
methyl ester (CA INDEX NAME)



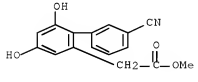
RN 860152-64-3 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3'-(hydroxymethyl)-, methyl ester (CA INDEX NAME)



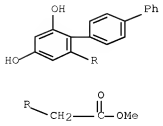
RN 860152-65-4 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3'-nitro-, methyl ester (CA INDEX NAME)



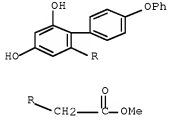
RN 860152-66-5 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 3'-cyano-4,6-dihydroxy-, methyl ester (CA INDEX NAME)



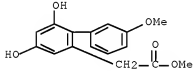
RN 860152-67-6 CAPLUS
CN [1,1':4',1''-Terphenyl]-2-acetic acid, 4,6-dihydroxy-, methyl ester (9CI) (CA INDEX NAME)



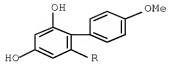
RN 860152-68-7 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-4'-phenoxy-, methyl ester
(CA INDEX NAME)

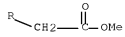


RN 860152-69-8 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-3'-methoxy-, methyl ester
(CA INDEX NAME)

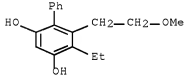


RN 860152-70-1 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 4,6-dihydroxy-4'-methoxy-, methyl ester
(CA INDEX NAME)

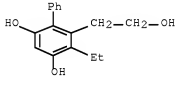




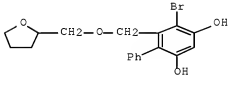
RN 860152-71-2 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-(2-methoxyethyl)- (CA INDEX NAME)



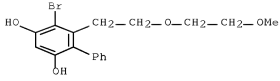
RN 860152-72-3 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-(2-hydroxyethyl)- (CA INDEX NAME)



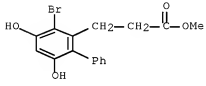
RN 860152-73-4 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[[(tetrahydro-2-furanyl)methoxy]methyl]- (CA INDEX NAME)



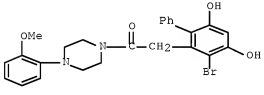
RN 860152-74-5 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[2-(2-methoxyethoxy)ethyl]- (CA INDEX NAME)



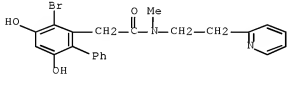
RN 860152-75-6 CAPLUS
CN [1,1'-Biphenyl]-2-propanoic acid, 3-bromo-4,6-dihydroxy-, methyl ester (CA INDEX NAME)



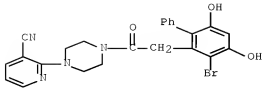
RN 860152-76-7 CAPLUS
CN Ethanone, 2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-1-[4-(2-methoxyphenyl)-1-piperazinyl]- (CA INDEX NAME)



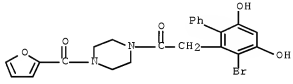
RN 860152-77-8 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-bromo-4,6-dihydroxy-N-methyl-N-[2-(2-pyridinyl)ethyl]- (CA INDEX NAME)



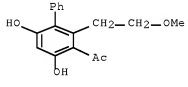
RN 860152-78-9 CAPLUS
CN 3-Pyridinecarbonitrile, 2-[4-[2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)acetyl]-1-piperazinyl]- (CA INDEX NAME)



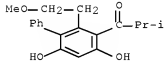
RN 860152-79-0 CAPLUS
CN Ethanone, 2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-1-[4-(2-furanylcarbonyl)-1-piperazinyl]- (CA INDEX NAME)



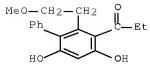
RN 860152-80-3 CAPLUS
CN Ethanone, 1-[4,6-dihydroxy-2-(2-methoxyethyl)[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



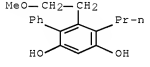
RN 860152-81-4 CAPLUS
CN 1-Propanone, 1-[4,6-dihydroxy-2-(2-methoxyethyl)[1,1'-biphenyl]-3-yl]-2-methyl- (CA INDEX NAME)



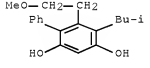
RN 860152-82-5 CAPLUS
CN 1-Propanone, 1-[4,6-dihydroxy-2-(2-methoxyethyl)[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



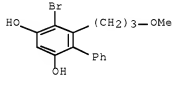
RN 860152-83-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-(2-methoxyethyl)-5-propyl- (CA INDEX NAME)



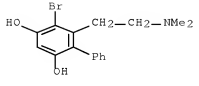
RN 860152-84-7 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-(2-methoxyethyl)-5-(2-methylpropyl)- (CA INDEX NAME)



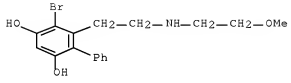
RN 860152-85-8 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-(3-methoxypropyl)- (CA INDEX NAME)



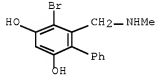
RN 860152-87-0 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[2-(dimethylamino)ethyl]- (CA INDEX NAME)



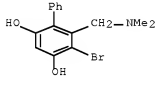
RN 860152-88-1 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[2-[(2-methoxyethyl)amino]ethyl]- (CA INDEX NAME)



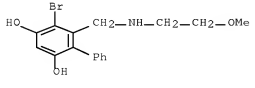
RN 860152-89-2 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[(methylamino)methyl]- (CA INDEX NAME)



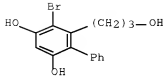
RN 860152-90-5 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[(dimethylamino)methyl]- (CA INDEX NAME)



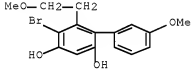
RN 860152-91-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[[(2-methoxyethyl)amino]methyl]- (CA INDEX NAME)



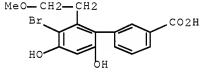
RN 860152-92-7 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-(3-hydroxypropyl)- (CA INDEX NAME)



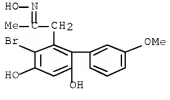
RN 860152-93-8 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-3'-methoxy-6-(2-methoxyethyl)- (CA INDEX NAME)



RN 860152-94-9 CAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid, 3'-bromo-4',6'-dihydroxy-2'-(2-methoxyethyl)- (CA INDEX NAME)

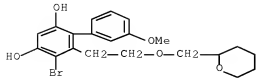


RN 860152-95-0 CAPLUS
CN 2-Propanone, 1-(3-bromo-4,6-dihydroxy-3'-methoxy[1,1'-biphenyl]-2-yl)-, oxime (CA INDEX NAME)

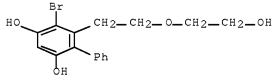


RN 860152-96-1 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-3'-methoxy-6-[2-[(tetrahydro-2H-pyran-2-

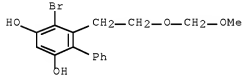
yl)methoxy]ethyl]- (CA INDEX NAME)



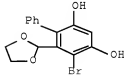
RN 860152-98-3 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[2-(2-hydroxyethoxy)ethyl]- (CA INDEX NAME)



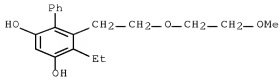
RN 860152-99-4 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[2-(methoxymethoxy)ethyl]- (CA INDEX NAME)



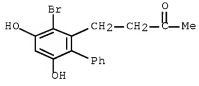
RN 860153-00-0 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-(1,3-dioxolan-2-yl)- (CA INDEX NAME)



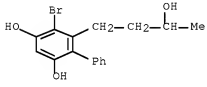
RN 860153-01-1 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-(2-methoxyethoxy)ethyl]- (CA INDEX NAME)



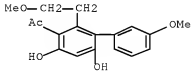
RN 860153-02-2 CAPLUS
CN 2-Butanone, 4-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



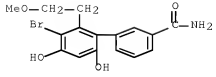
RN 860153-03-3 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-(3-hydroxybutyl)- (CA INDEX NAME)



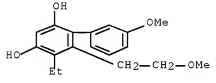
RN 860153-04-4 CAPLUS
CN Ethanone, 1-[4,6-dihydroxy-3'-methoxy-2-(2-methoxyethyl)[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



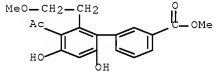
RN 860153-05-5 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 3'-bromo-4',6'-dihydroxy-2'-(2-methoxyethyl)- (CA INDEX NAME)



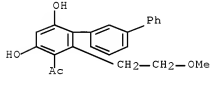
RN 860153-06-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-3'-methoxy-6-(2-methoxyethyl)- (CA INDEX NAME)



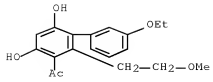
RN 860153-07-7 CAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid, 3'-acetyl-4',6'-dihydroxy-2'-(2-methoxyethyl)-, methyl ester (CA INDEX NAME)



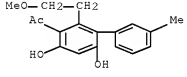
RN 860153-08-8 CAPLUS
CN Ethanone, 1-[4,6-dihydroxy-2-(2-methoxyethyl)[1,1':3',1''-terphenyl]-3-yl]- (9CI) (CA INDEX NAME)



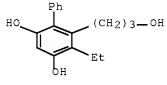
RN 860153-09-9 CAPLUS
CN Ethanone, 1-[3'-ethoxy-4,6-dihydroxy-2-(2-methoxyethyl)[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



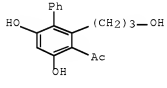
RN 860153-10-2 CAPLUS
CN Ethanone, 1-[4,6-dihydroxy-2-(2-methoxyethyl)-3'-methyl[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



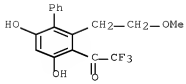
RN 860153-11-3 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-(3-hydroxypropyl)- (CA INDEX NAME)



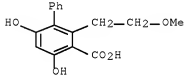
RN 860153-12-4 CAPLUS
CN Ethanone, 1-[4,6-dihydroxy-2-(3-hydroxypropyl)[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



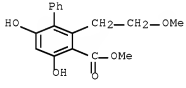
RN 860153-13-5 CAPLUS
CN Ethanone, 1-[4,6-dihydroxy-2-(2-methoxyethyl)[1,1'-biphenyl]-3-yl]-2,2,2-trifluoro- (CA INDEX NAME)



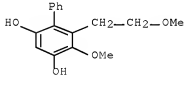
RN 860153-15-7 CAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid, 4,6-dihydroxy-2-(2-methoxyethyl)- (CA INDEX NAME)



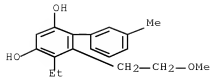
RN 860153-16-8 CAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid, 4,6-dihydroxy-2-(2-methoxyethyl)-, methyl ester (CA INDEX NAME)



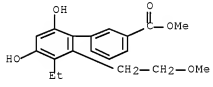
RN 860153-17-9 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-methoxy-6-(2-methoxyethyl)- (CA INDEX NAME)



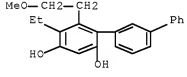
RN 860153-18-0 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-(2-methoxyethyl)-3'-methyl- (CA INDEX NAME)



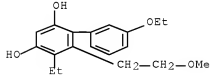
RN 860153-19-1 CAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid, 3'-ethyl-4',6'-dihydroxy-2'-(2-methoxyethyl)-, methyl ester (CA INDEX NAME)



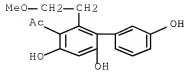
RN 860153-20-4 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,4-diol, 5-ethyl-6-(2-methoxyethyl)- (9CI) (CA INDEX NAME)



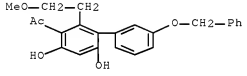
RN 860153-21-5 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 3'-ethoxy-5-ethyl-6-(2-methoxyethyl)- (CA INDEX NAME)



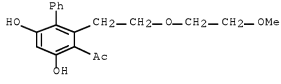
RN 860153-22-6 CAPLUS
CN Ethanone, 1-[3',4,6-trihydroxy-2-(2-methoxyethyl)[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



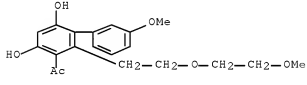
RN 860153-23-7 CAPLUS
CN Ethanone, 1-[4,6-dihydroxy-2-(2-methoxyethyl)-3'-(phenylmethoxy)[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



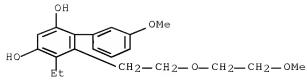
RN 860153-24-8 CAPLUS
CN Ethanone, 1-[4,6-dihydroxy-2-[2-(2-methoxyethoxy)ethyl][1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



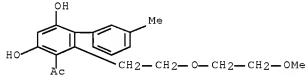
RN 860153-25-9 CAPLUS
CN Ethanone, 1-[4,6-dihydroxy-3'-methoxy-2-[2-(2-methoxyethoxy)ethyl][1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



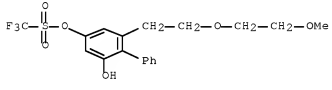
RN 860153-26-0 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-3'-methoxy-6-[2-(2-methoxyethoxy)ethyl]- (CA INDEX NAME)



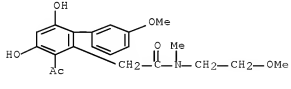
RN 860153-27-1 CAPLUS
CN Ethanone, 1-[4,6-dihydroxy-2-[2-(2-methoxyethoxy)ethyl]-3'-methyl[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



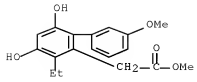
RN 860153-28-2 CAPLUS
CN Methanesulfonic acid, 1,1,1-trifluoro-, 2-hydroxy-6-[2-(2-methoxyethoxy)ethyl][1,1'-biphenyl]-4-yl ester (CA INDEX NAME)



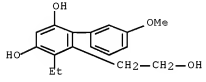
RN 860153-29-3 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-acetyl-4,6-dihydroxy-3'-methoxy-N-(2-methoxyethyl)-N-methyl- (CA INDEX NAME)



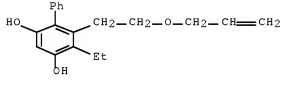
RN 860153-30-6 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 3-ethyl-4,6-dihydroxy-3'-methoxy-, methyl ester (CA INDEX NAME)



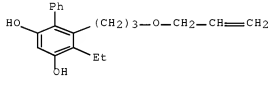
RN 860153-31-7 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-(2-hydroxyethyl)-3'-methoxy- (CA INDEX NAME)



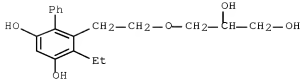
RN 860153-32-8 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-(2-propen-1-yloxy)ethyl]- (CA INDEX NAME)



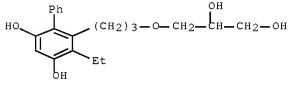
RN 860153-33-9 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[3-(2-propen-1-yloxy)propyl]- (CA INDEX NAME)



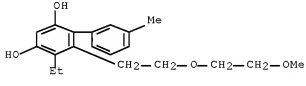
RN 860153-35-1 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[2-(2,3-dihydroxypropoxy)ethyl]-5-ethyl- (CA INDEX NAME)



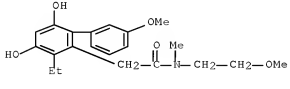
RN 860153-36-2 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[3-(2,3-dihydroxypropoxy)propyl]-5-ethyl- (CA INDEX NAME)



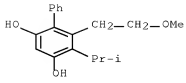
RN 860153-37-3 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-(2-methoxyethoxy)ethyl]-3'-methyl- (CA INDEX NAME)



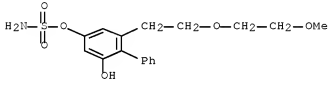
RN 860153-38-4 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-ethyl-4,6-dihydroxy-3'-methoxy-N-(2-methoxyethyl)-N-methyl- (CA INDEX NAME)



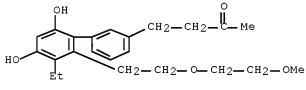
RN 860153-39-5 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-(2-methoxyethyl)-5-(1-methylethyl)- (CA INDEX NAME)



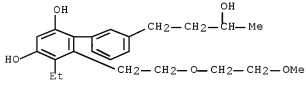
RN 860153-40-8 CAPLUS
CN Sulfamic acid, 2-hydroxy-6-[2-(2-methoxyethoxy)ethyl][1,1'-biphenyl]-4-yl ester (9CI) (CA INDEX NAME)



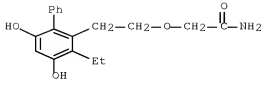
RN 860153-41-9 CAPLUS
CN 2-Butanone, 4-[3'-ethyl-4',6'-dihydroxy-2'-[2-(2-methoxyethoxy)ethyl][1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



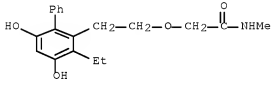
RN 860153-42-0 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-3'-(3-hydroxybutyl)-6-[2-(2-methoxyethoxy)ethyl]- (CA INDEX NAME)



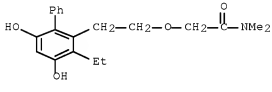
RN 860153-43-1 CAPLUS
CN Acetamide, 2-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethoxy]- (CA INDEX NAME)



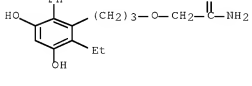
RN 860153-44-2 CAPLUS
CN Acetamide, 2-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethoxy]-N-methyl- (CA INDEX NAME)



RN 860153-45-3 CAPLUS
CN Acetamide, 2-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethoxy]-N,N-dimethyl- (CA INDEX NAME)

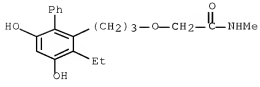


RN 860153-46-4 CAPLUS
CN Acetamide, 2-[3-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)propoxy]- (CA INDEX NAME)

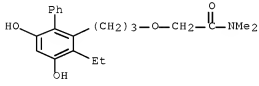


RN 860153-47-5 CAPLUS
CN Acetamide, 2-[3-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)propoxy]-N-

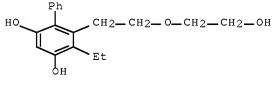
methyl- (CA INDEX NAME)



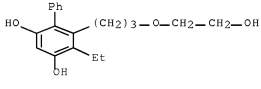
RN 860153-48-6 CAPLUS
CN Acetamide, 2-[3-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)propoxy]-N,N-dimethyl- (CA INDEX NAME)



RN 860153-49-7 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-(2-hydroxyethoxy)ethyl]- (CA INDEX NAME)

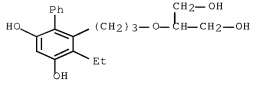


RN 860153-50-0 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[3-(2-hydroxyethoxy)propyl]- (CA INDEX NAME)

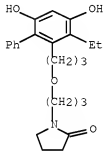


RN 860153-51-1 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[3-[2-hydroxy-1-

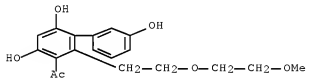
(hydroxymethyl)ethoxy]propyl]- (CA INDEX NAME)



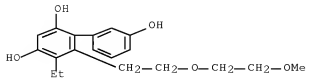
RN 860153-52-2 CAPLUS
CN 2-Pyrrolidinone, 1-[3-[3-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)propoxy]propyl]- (CA INDEX NAME)



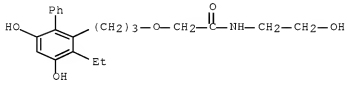
RN 860153-53-3 CAPLUS
CN Ethanone, 1-[3',4,6-trihydroxy-2-[2-(2-methoxyethoxy)ethyl][1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



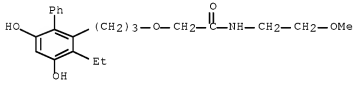
RN 860153-54-4 CAPLUS
CN [1,1'-Biphenyl]-2,3',4-triol, 5-ethyl-6-[2-(2-methoxyethoxy)ethyl]- (CA INDEX NAME)



RN 860153-55-5 CAPLUS
CN Acetamide, 2-[3-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)propoxy]-N-(2-hydroxyethyl)- (CA INDEX NAME)

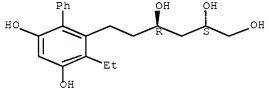


RN 860153-56-6 CAPLUS
CN Acetamide, 2-[3-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)propoxy]-N-(2-methoxyethyl)- (CA INDEX NAME)



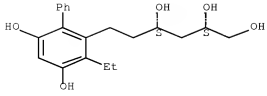
RN 860153-57-7 CAPLUS
CN 1,2,4-Hexanetriol, 6-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-, (2R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.

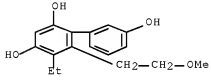


RN 860153-58-8 CAPLUS
CN 1,2,4-Hexanetriol, 6-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-, (2R,4R)-rel- (CA INDEX NAME)

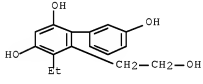
Relative stereochemistry.



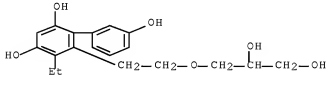
RN 860153-59-9 CAPLUS
CN [1,1'-Biphenyl]-2,3',4-triol, 5-ethyl-6-(2-methoxyethyl)- (CA INDEX NAME)



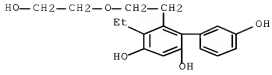
RN 860153-60-2 CAPLUS
CN [1,1'-Biphenyl]-2,3',4-triol, 5-ethyl-6-(2-hydroxyethyl)- (CA INDEX NAME)



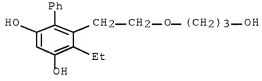
RN 860153-61-3 CAPLUS
CN [1,1'-Biphenyl]-2,3',4-triol, 6-[2-(2,3-dihydroxypropoxy)ethyl]-5-ethyl-
(CA INDEX NAME)



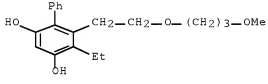
RN 860153-62-4 CAPLUS
CN [1,1'-Biphenyl]-2,3',4-triol, 5-ethyl-6-[2-(2-hydroxyethoxy)ethyl]- (CA
INDEX NAME)



RN 860153-63-5 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-(3-hydroxypropoxy)ethyl]- (CA INDEX NAME)

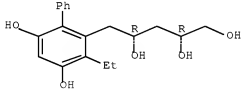


RN 860153-64-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-(3-methoxypropoxy)ethyl]- (CA INDEX NAME)



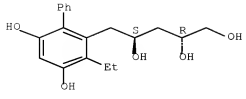
RN 860153-65-7 CAPLUS
CN erythro-Pentitol, 3,5-dideoxy-5-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

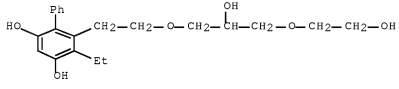


RN 860153-66-8 CAPLUS
CN threo-Pentitol, 1,3-dideoxy-1-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)- (CA INDEX NAME)

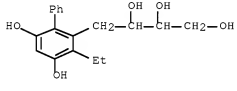
Relative stereochemistry.



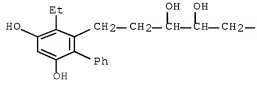
RN 860153-67-9 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-[2-hydroxy-3-(2-hydroxyethoxy)propoxy]ethyl]- (CA INDEX NAME)



RN 860153-68-0 CAPLUS
CN 1,2,3-Butanetriol, 4-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)- (CA INDEX NAME)

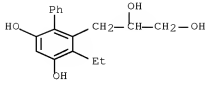


RN 860153-69-1 CAPLUS
CN Pentitol, 1,2-dideoxy-1-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)- (9CI) (CA INDEX NAME)



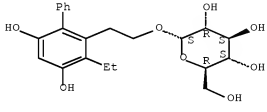
RN 860153-70-4 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-(2,3-dihydroxypropyl)-5-ethyl- (CA INDEX

NAME)

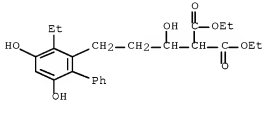


RN 860153-71-5 CAPLUS
CN α-D-Glucopyranoside, 2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl (CA INDEX NAME)

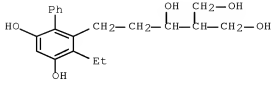
Absolute stereochemistry.



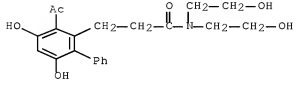
RN 860153-72-6 CAPLUS
CN Propanedioic acid, 2-[3-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)-1-hydroxypropyl]-, 1,3-diethyl ester (CA INDEX NAME)



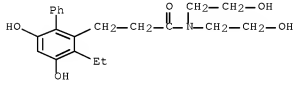
RN 860153-73-7 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[3,5-dihydroxy-4-(hydroxymethyl)pentyl]-5-ethyl- (CA INDEX NAME)



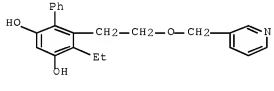
RN 860153-74-8 CAPLUS
CN [1,1'-Biphenyl]-2-propanamide, 3-acetyl-4,6-dihydroxy-N,N-bis(2-hydroxyethyl)- (CA INDEX NAME)



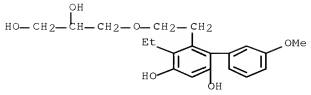
RN 860153-75-9 CAPLUS
CN [1,1'-Biphenyl]-2-propanamide, 3-ethyl-4,6-dihydroxy-N,N-bis(2-hydroxyethyl)- (CA INDEX NAME)



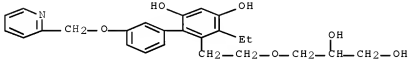
RN 860153-76-0 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-(3-pyridinylmethoxy)ethyl]- (CA INDEX NAME)



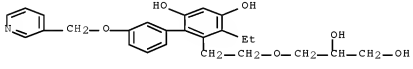
RN 860153-77-1 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[2-(2,3-dihydroxypropoxy)ethyl]-5-ethyl-3'-methoxy- (CA INDEX NAME)



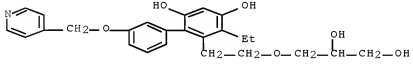
RN 860153-78-2 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[2-(2,3-dihydroxypropoxy)ethyl]-5-ethyl-3'-(2-pyridinylmethoxy)- (CA INDEX NAME)



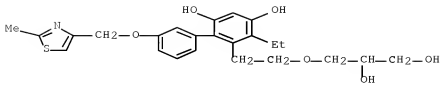
RN 860153-79-3 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[2-(2,3-dihydroxypropoxy)ethyl]-5-ethyl-3'-(3-pyridinylmethoxy)- (CA INDEX NAME)



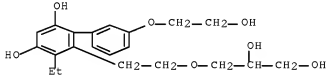
RN 860153-80-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[2-(2,3-dihydroxypropoxy)ethyl]-5-ethyl-3'-(4-pyridinylmethoxy)- (CA INDEX NAME)



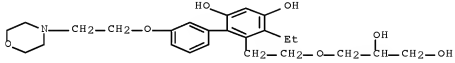
RN 860153-81-7 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[2-(2,3-dihydroxypropoxy)ethyl]-5-ethyl-3'-[(2-methyl-4-thiazolyl)methoxy]- (CA INDEX NAME)



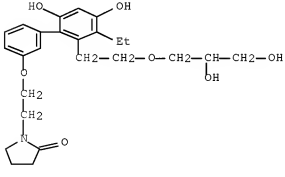
RN 860153-82-8 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[2-(2,3-dihydroxypropoxy)ethyl]-5-ethyl-3'-(2-hydroxyethoxy)- (CA INDEX NAME)



RN 860153-83-9 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[2-(2,3-dihydroxypropoxy)ethyl]-5-ethyl-3'-[2-(4-morpholinyl)ethoxy]- (CA INDEX NAME)

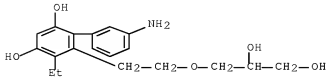


RN 860153-84-0 CAPLUS
CN 2-Pyrrolidinone, 1-[2-[[2'-[2-(2,3-dihydroxypropoxy)ethyl]-3'-ethyl-4',6'-dihydroxy[1,1'-biphenyl]-3-yl]oxy]ethyl]- (CA INDEX NAME)

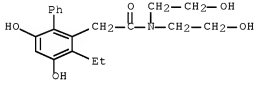


RN 860153-85-1 CAPLUS

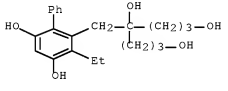
CN [1,1'-Biphenyl]-2,4-diol, 3'-amino-6-[2-(2,3-dihydroxypropoxy)ethyl]-5-ethyl- (CA INDEX NAME)



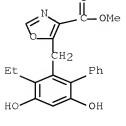
RN 860153-86-2 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-ethyl-4,6-dihydroxy-N,N-bis(2-hydroxyethyl)- (CA INDEX NAME)



RN 860153-87-3 CAPLUS
CN 1,4,7-Heptanetriol, 4-[(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]- (CA INDEX NAME)

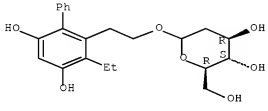


RN 860153-88-4 CAPLUS
CN 4-Oxazolecarboxylic acid, 5-[(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, methyl ester (CA INDEX NAME)

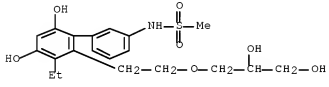


RN 860153-89-5 CAPLUS
CN D-arabino-Hexopyranoside, 2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl 2-deoxy- (CA INDEX NAME)

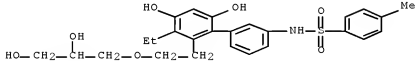
Absolute stereochemistry.



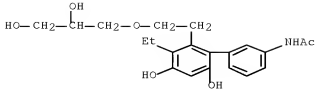
RN 860153-90-8 CAPLUS
CN Methanesulfonamide, N-[2'-[2-(2,3-dihydroxypropoxy)ethyl]-3'-ethyl-4',6'-dihydroxy[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



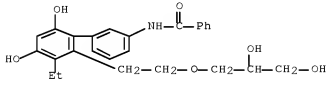
RN 860153-91-9 CAPLUS
CN Benzenesulfonamide, N-[2'-[2-(2,3-dihydroxypropoxy)ethyl]-3'-ethyl-4',6'-dihydroxy[1,1'-biphenyl]-3-yl]-4-methyl- (CA INDEX NAME)



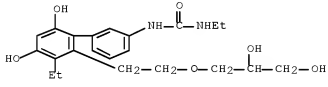
RN 860153-92-0 CAPLUS
CN Acetamide, N-[2'-[2-(2,3-dihydroxypropoxy)ethyl]-3'-ethyl-4',6'-dihydroxy[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



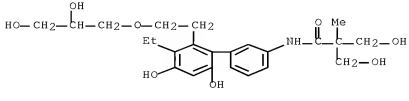
RN 860153-93-1 CAPLUS
CN Benzamide, N-[2'-[2-(2,3-dihydroxypropoxy)ethyl]-3'-ethyl-4',6'-dihydroxy[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



RN 860153-94-2 CAPLUS
CN Urea, N-[2'-[2-(2,3-dihydroxypropoxy)ethyl]-3'-ethyl-4',6'-dihydroxy[1,1'-biphenyl]-3-yl]-N'-ethyl- (CA INDEX NAME)

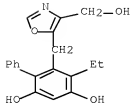


RN 860153-95-3 CAPLUS
CN Propanamide, N-[2'-[2-(2,3-dihydroxypropoxy)ethyl]-3'-ethyl-4',6'-dihydroxy[1,1'-biphenyl]-3-yl]-3-hydroxy-2-(hydroxymethyl)-2-methyl- (CA INDEX NAME)

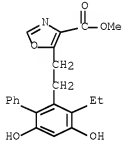


RN 860153-96-4 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[[4-(hydroxymethyl)-5-oxazolyl]methyl]-

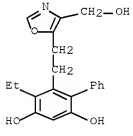
(CA INDEX NAME)



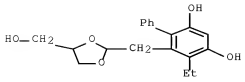
RN 860153-97-5 CAPLUS
CN 4-Oxazolecarboxylic acid, 5-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl]-, methyl ester (CA INDEX NAME)



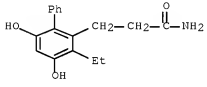
RN 860153-98-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-[4-(hydroxymethyl)-5-oxazolyl]ethyl]- (CA INDEX NAME)



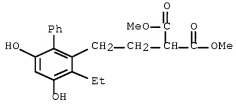
RN 860153-99-7 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[[4-(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]- (CA INDEX NAME)



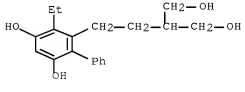
RN 860154-00-3 CAPLUS
CN [1,1'-Biphenyl]-2-propanamide, 3-ethyl-4,6-dihydroxy- (CA INDEX NAME)



RN 860154-01-4 CAPLUS
CN Propanedioic acid, 2-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl]-, 1,3-dimethyl ester (CA INDEX NAME)

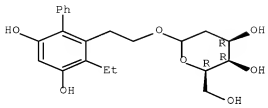


RN 860154-03-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[4-hydroxy-3-(hydroxymethyl)butyl]- (CA INDEX NAME)

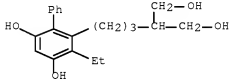


RN 860154-04-7 CAPLUS
CN D-lyxo-Hexopyranoside, 2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl 2-deoxy- (CA INDEX NAME)

Absolute stereochemistry.

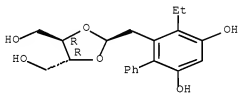


RN 860154-05-8 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[5-hydroxy-4-(hydroxymethyl)pentyl]- (CA INDEX NAME)

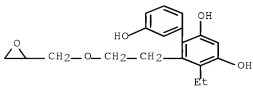


RN 860154-06-9 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4R,5R)- (CA INDEX NAME)

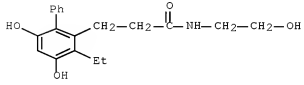
Absolute stereochemistry.



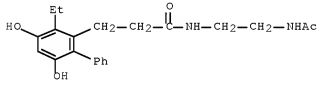
RN 860154-07-0 CAPLUS
CN [1,1'-Biphenyl]-2,3',4-triol, 5-ethyl-6-[2-(2-oxiranylmethoxy)ethyl]- (CA INDEX NAME)



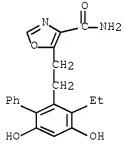
RN 860154-08-1 CAPLUS
CN [1,1'-Biphenyl]-2-propanamide, 3-ethyl-4,6-dihydroxy-N-(2-hydroxyethyl)- (CA INDEX NAME)



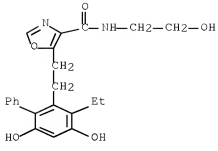
RN 860154-09-2 CAPLUS
CN [1,1'-Biphenyl]-2-propanamide, N-[2-(acetylamino)ethyl]-3-ethyl-4,6-dihydroxy- (CA INDEX NAME)



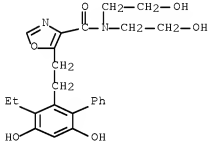
RN 860154-10-5 CAPLUS
CN 4-Oxazolecarboxamide, 5-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl]- (CA INDEX NAME)



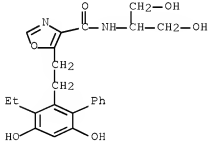
RN 860154-11-6 CAPLUS
CN 4-Oxazolecarboxamide, 5-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl]-N-(2-hydroxyethyl)- (CA INDEX NAME)



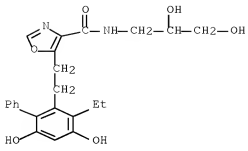
RN 860154-12-7 CAPLUS
CN 4-Oxazolecarboxamide, 5-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl]-N,N-bis(2-hydroxyethyl)- (CA INDEX NAME)



RN 860154-13-8 CAPLUS
CN 4-Oxazolecarboxamide, 5-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl]-N-[2-hydroxy-1-(hydroxymethyl)ethyl]- (CA INDEX NAME)

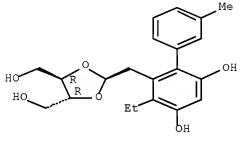


RN 860154-14-9 CAPLUS
CN 4-Oxazolecarboxamide, N-(2,3-dihydroxypropyl)-5-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl]- (CA INDEX NAME)



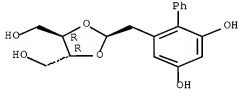
RN 860154-15-0 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-4,6-dihydroxy-3'-methyl[1,1'-biphenyl]-2-yl)methyl]-, (4R,5R)- (CA INDEX NAME)

Absolute stereochemistry.



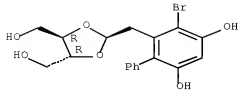
RN 860154-16-1 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4R,5R)- (CA INDEX NAME)

Absolute stereochemistry.



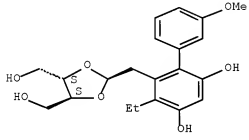
RN 860154-18-3 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4R,5R)- (CA INDEX NAME)

Absolute stereochemistry.



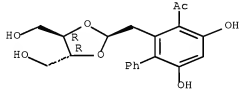
RN 860154-19-4 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-4,6-dihydroxy-3'-methoxy[1,1'-biphenyl]-2-yl)methyl]-, (4S,5S)- (CA INDEX NAME)

Absolute stereochemistry.



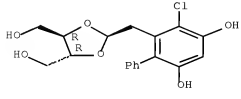
RN 860154-20-7 CAPLUS
CN Ethanone, 1-[2-[[(4R,5R)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-4,6-dihydroxy[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)

Absolute stereochemistry.



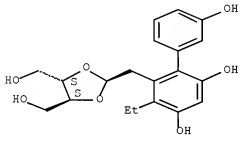
RN 860154-66-1 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-chloro-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4R,5R)- (CA INDEX NAME)

Absolute stereochemistry.



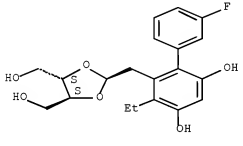
RN 860154-67-2 CAPLUS
CN [1,1'-Biphenyl]-2,3',4-triol, 6-[[(4S,5S)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-5-ethyl- (CA INDEX NAME)

Absolute stereochemistry.



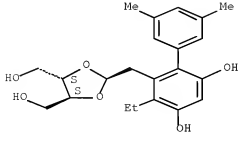
RN 860154-68-3 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-3'-fluoro-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4S,5S)- (CA INDEX NAME)

Absolute stereochemistry.



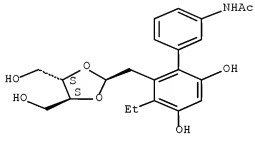
RN 860154-69-4 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-4,6-dihydroxy-3',5'-dimethyl[1,1'-biphenyl]-2-yl)methyl]-, (4S,5S)- (CA INDEX NAME)

Absolute stereochemistry.



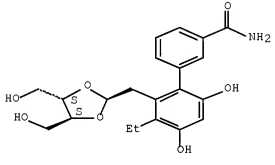
RN 860154-70-7 CAPLUS
CN Acetamide, N-[2'-[[(4S,5S)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-3'-ethyl-4',6'-dihydroxy[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)

Absolute stereochemistry.



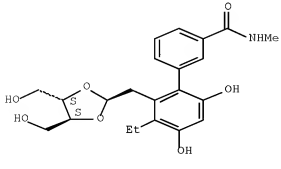
RN 860154-71-8 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 2'-[[(4S,5S)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-3'-ethyl-4',6'-dihydroxy- (CA INDEX NAME)

Absolute stereochemistry.



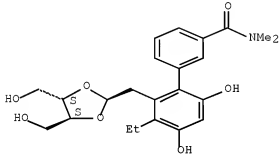
RN 860154-72-9 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 2'-[[(4S,5S)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-3'-ethyl-4',6'-dihydroxy-N-methyl- (CA INDEX NAME)

Absolute stereochemistry.



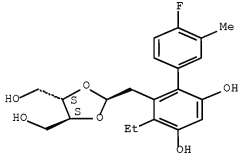
RN 860154-73-0 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 2'-[[(4S,5S)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-3'-ethyl-4',6'-dihydroxy-N,N-dimethyl- (CA INDEX NAME)

Absolute stereochemistry.



RN 860154-74-1 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-4'-fluoro-4,6-dihydroxy-3'-methyl[1,1'-biphenyl]-2-yl)methyl]-, (4S,5S)- (CA INDEX NAME)

Absolute stereochemistry.

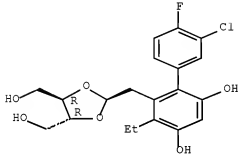


IT 860154-75-2P 860154-76-3P 860154-77-4P
860154-78-5P 860154-79-6P 860154-80-9P
860154-81-0P 860154-82-1P 860154-83-2P
860154-84-3P 860154-85-4P 860154-86-5P
860154-87-6P 860154-88-7P 860154-89-8P
860154-90-1P 860154-91-2P 860154-92-3P
860154-93-4P 860154-94-5P 860154-95-6P
860154-96-7P 860154-97-8P 860154-98-9P
860155-00-6P 860174-19-2P 860174-21-6P
860174-22-7P 860293-36-3P 860293-37-4P
860293-38-5P 860293-39-6P 860293-40-9P
860293-41-0P 860293-42-1P 860293-43-2P
860293-44-3P 860293-45-4P 860293-46-5P
860293-47-6P 860293-48-7P 860293-62-5P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU

(Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(benzene derivs. as Hsp90 family protein inhibitors and antitumor agents)

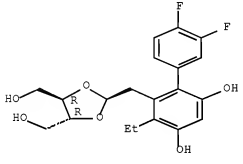
RN 860154-75-2 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3'-chloro-3-ethyl-4'-fluoro-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4R,5R)- (CA INDEX NAME)

Absolute stereochemistry.



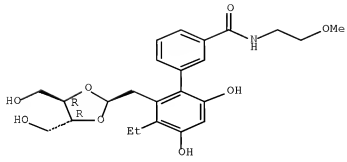
RN 860154-76-3 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-3',4'-difluoro-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4R,5R)- (CA INDEX NAME)

Absolute stereochemistry.



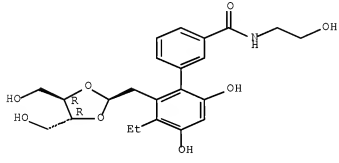
RN 860154-77-4 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 2'-[[(4R,5R)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-3'-ethyl-4',6'-dihydroxy-N-(2-methoxyethyl)- (CA INDEX NAME)

Absolute stereochemistry.



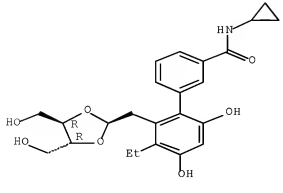
RN 860154-78-5 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 2'-[[(4R,5R)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-3'-ethyl-4',6'-dihydroxy-N-(2-hydroxyethyl)- (CA INDEX NAME)

Absolute stereochemistry.



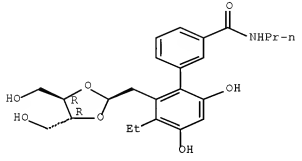
RN 860154-79-6 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 2'-[[(4R,5R)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-N-cyclopropyl-3'-ethyl-4',6'-dihydroxy- (CA INDEX NAME)

Absolute stereochemistry.



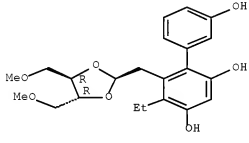
RN 860154-80-9 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 2'-[[(4R,5R)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-3'-ethyl-4',6'-dihydroxy-N-propyl- (CA INDEX NAME)

Absolute stereochemistry.



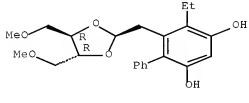
RN 860154-81-0 CAPLUS
CN [1,1'-Biphenyl]-2,3',4-triol, 6-[[(4R,5R)-4,5-bis(methoxymethyl)-1,3-dioxolan-2-yl]methyl]-5-ethyl- (CA INDEX NAME)

Absolute stereochemistry.

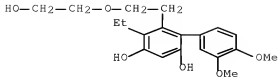


RN 860154-82-1 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-[[(4R,5R)-4,5-bis(methoxymethyl)-1,3-dioxolan-2-yl]methyl]-5-ethyl- (CA INDEX NAME)

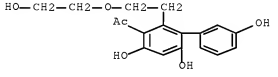
Absolute stereochemistry.



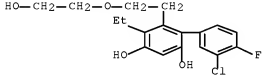
RN 860154-83-2 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-(2-hydroxyethoxy)ethyl]-3',4'-dimethoxy- (CA INDEX NAME)



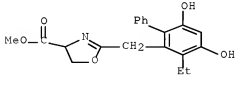
RN 860154-84-3 CAPLUS
CN Ethanone, 1-[3',4,6-trihydroxy-2-[2-(2-hydroxyethoxy)ethyl][1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



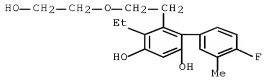
RN 860154-85-4 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 3'-chloro-5-ethyl-4'-fluoro-6-[2-(2-hydroxyethoxy)ethyl]- (CA INDEX NAME)



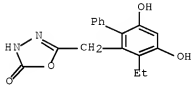
RN 860154-86-5 CAPLUS
CN 4-Oxazolecarboxylic acid, 2-[(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-4,5-dihydro-, methyl ester (CA INDEX NAME)



RN 860154-87-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-4'-fluoro-6-[2-(2-hydroxyethoxy)ethyl]-3'-methyl- (CA INDEX NAME)

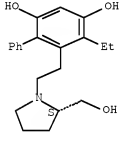


RN 860154-88-7 CAPLUS
CN 1,3,4-Oxadiazol-2(3H)-one, 5-[(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]- (CA INDEX NAME)

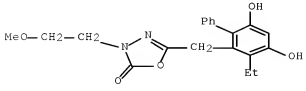


RN 860154-89-8 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-[(2S)-2-(hydroxymethyl)-1-pyrrolidinyl]ethyl]- (CA INDEX NAME)

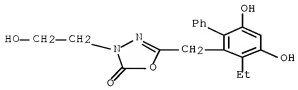
Absolute stereochemistry.



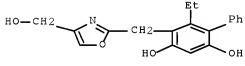
RN 860154-90-1 CAPLUS
CN 1,3,4-Oxadiazol-2(3H)-one, 5-[(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-3-(2-methoxyethyl)- (CA INDEX NAME)



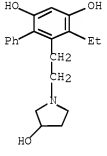
RN 860154-91-2 CAPLUS
CN 1,3,4-Oxadiazol-2(3H)-one, 5-[(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-3-(2-hydroxyethyl)- (CA INDEX NAME)



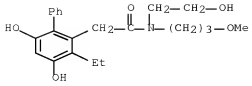
RN 860154-92-3 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-ethyl-5-[[4-(hydroxymethyl)-2-oxazolyl]methyl]- (CA INDEX NAME)



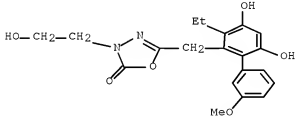
RN 860154-93-4 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-(3-hydroxy-1-pyrrolidinyl)ethyl]- (CA INDEX NAME)



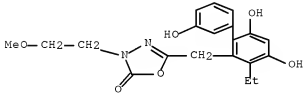
RN 860154-94-5 CAPLUS
CN [1,1'-Biphenyl]-2-acetamide, 3-ethyl-4,6-dihydroxy-N-(2-hydroxyethyl)-N-(3-methoxypropyl)- (CA INDEX NAME)



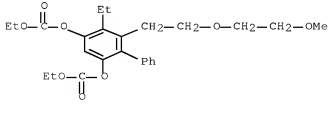
RN 860154-95-6 CAPLUS
CN 1,3,4-Oxadiazol-2(3H)-one, 5-[(3-ethyl-4,6-dihydroxy-3'-methoxy[1,1'-biphenyl]-2-yl)methyl]-3-(2-hydroxyethyl)- (CA INDEX NAME)



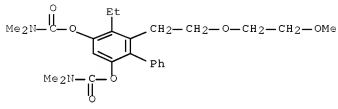
RN 860154-96-7 CAPLUS
CN 1,3,4-Oxadiazol-2(3H)-one, 5-[(3-ethyl-3',4,6-trihydroxy[1,1'-biphenyl]-2-yl)methyl]-3-(2-methoxyethyl)- (CA INDEX NAME)



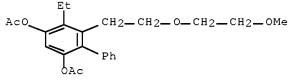
RN 860154-97-8 CAPLUS
CN Carbonic acid, 5-ethyl-6-[2-(2-methoxyethoxy)ethyl][1,1'-biphenyl]-2,4-diyl diethyl ester (9CI) (CA INDEX NAME)



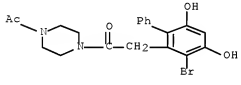
RN 860154-98-9 CAPLUS
CN Carbamic acid, dimethyl-, 5-ethyl-6-[2-(2-methoxyethoxy)ethyl][1,1'-biphenyl]-2,4-diyl ester (9CI) (CA INDEX NAME)



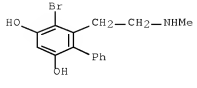
RN 860155-00-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-ethyl-6-[2-(2-methoxyethoxy)ethyl]-, 2,4-diacetate (CA INDEX NAME)



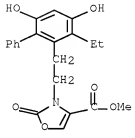
RN 860174-19-2 CAPLUS
CN Ethanone, 1-(4-acetyl-1-piperazinyl)-2-(3-bromo-4,6-dihydroxy[1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



RN 860174-21-6 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 5-bromo-6-[2-(methylamino)ethyl]- (CA INDEX NAME)

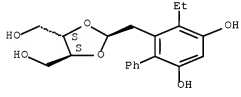


RN 860174-22-7 CAPLUS
CN 4-Oxazolecarboxylic acid, 3-[2-(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)ethyl]-2,3-dihydro-2-oxo-, methyl ester (CA INDEX NAME)



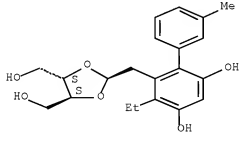
RN 860293-36-3 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4S,5S)- (CA INDEX NAME)

Absolute stereochemistry.



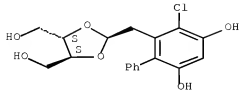
RN 860293-37-4 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-4,6-dihydroxy-3'-methyl[1,1'-biphenyl]-2-yl)methyl]-, (4S,5S)- (CA INDEX NAME)

Absolute stereochemistry.



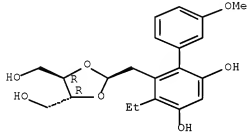
RN 860293-38-5 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-chloro-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4S,5S)- (CA INDEX NAME)

Absolute stereochemistry.



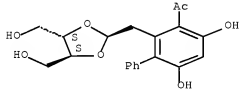
RN 860293-39-6 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-4,6-dihydroxy-3'-methoxy[1,1'-biphenyl]-2-yl)methyl]-, (4R,5R)- (CA INDEX NAME)

Absolute stereochemistry.



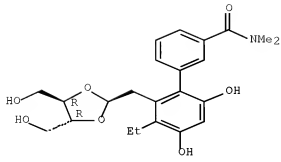
RN 860293-40-9 CAPLUS
CN Ethanone, 1-[2-[[(4S,5S)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-4,6-dihydroxy[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)

Absolute stereochemistry.



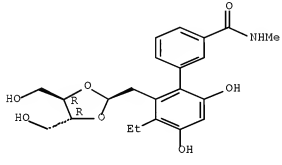
RN 860293-41-0 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 2'-[[(4R,5R)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-3'-ethyl-4',6'-dihydroxy-N,N-dimethyl- (CA INDEX NAME)

Absolute stereochemistry.



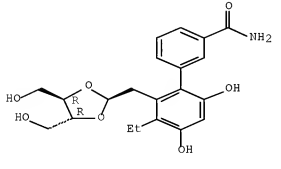
RN 860293-42-1 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 2'-[[(4R,5R)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-3'-ethyl-4',6'-dihydroxy-N-methyl- (CA INDEX NAME)

Absolute stereochemistry.



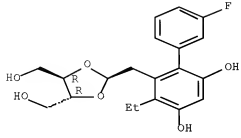
RN 860293-43-2 CAPLUS
CN [1,1'-Biphenyl]-3-carboxamide, 2'-[[(4R,5R)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-3'-ethyl-4',6'-dihydroxy- (CA INDEX NAME)

Absolute stereochemistry.



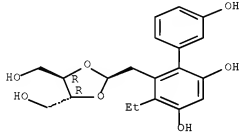
RN 860293-44-3 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-3'-fluoro-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4R,5R)- (CA INDEX NAME)

Absolute stereochemistry.



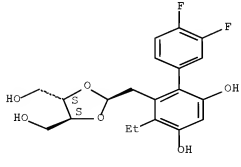
RN 860293-45-4 CAPLUS
CN [1,1'-Biphenyl]-2,3',4-triol, 6-[[(4R,5R)-4,5-bis(hydroxymethyl)-1,3-dioxolan-2-yl]methyl]-5-ethyl- (CA INDEX NAME)

Absolute stereochemistry.



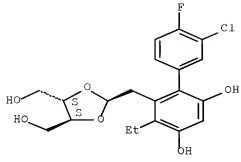
RN 860293-46-5 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-3',4'-difluoro-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4S,5S)- (CA INDEX NAME)

Absolute stereochemistry.



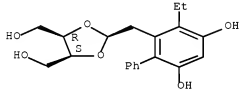
RN 860293-47-6 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3'-chloro-3-ethyl-4'-fluoro-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4S,5S)- (CA INDEX NAME)

Absolute stereochemistry.



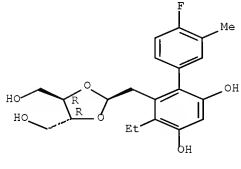
RN 860293-48-7 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4R,5S)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 860293-62-5 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(3-ethyl-4'-fluoro-4,6-dihydroxy-3'-methyl[1,1'-biphenyl]-2-yl)methyl]-, (4R,5R)- (CA INDEX NAME)

Absolute stereochemistry.

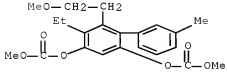


IT 860156-38-3P 860156-39-4P 860156-40-7P
860156-41-8P 860156-51-0P 860156-57-6P
860156-63-4P 860156-96-3P 860157-27-3P
860293-52-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(benzene derivs. as Hsp90 family protein inhibitors and antitumor agents)

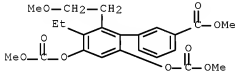
RN 860156-38-3 CAPLUS

CN Carbonic acid, 5-ethyl-6-(2-methoxyethyl)-3'-methyl[1,1'-biphenyl]-2,4-diyl dimethyl ester (9CI) (CA INDEX NAME)



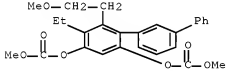
RN 860156-39-4 CAPLUS

CN [1,1'-Biphenyl]-3-carboxylic acid, 3'-ethyl-4',6'-bis[(methoxycarbonyl)oxy]-2'-(2-methoxyethyl)-, methyl ester (CA INDEX NAME)



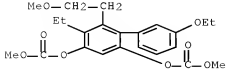
RN 860156-40-7 CAPLUS

CN Carbonic acid, 5-ethyl-6-(2-methoxyethyl)[1,1':3',1''-terphenyl]-2,4-diyl dimethyl ester (9CI) (CA INDEX NAME)

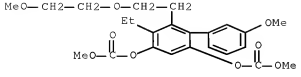


RN 860156-41-8 CAPLUS

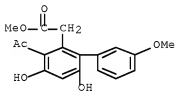
CN Carbonic acid, 3'-ethoxy-5-ethyl-6-(2-methoxyethyl)[1,1'-biphenyl]-2,4-diyl dimethyl ester (9CI) (CA INDEX NAME)



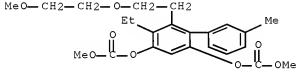
RN 860156-51-0 CAPLUS
CN Carbonic acid, 5-ethyl-3'-methoxy-6-[2-(2-methoxyethoxy)ethyl][1,1'-biphenyl]-2,4-diyl dimethyl ester (9CI) (CA INDEX NAME)



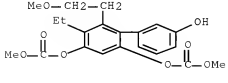
RN 860156-57-6 CAPLUS
CN [1,1'-Biphenyl]-2-acetic acid, 3-acetyl-4,6-dihydroxy-3'-methoxy-, methyl ester (CA INDEX NAME)



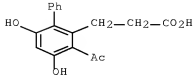
RN 860156-63-4 CAPLUS
CN Carbonic acid, 5-ethyl-6-[2-(2-methoxyethoxy)ethyl]-3'-methyl[1,1'-biphenyl]-2,4-diyl dimethyl ester (9CI) (CA INDEX NAME)



RN 860156-96-3 CAPLUS
CN Carbonic acid, 5-ethyl-3'-hydroxy-6-(2-methoxyethyl)[1,1'-biphenyl]-2,4-diyl dimethyl ester (9CI) (CA INDEX NAME)

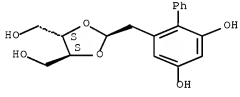


RN 860157-27-3 CAPLUS
CN [1,1'-Biphenyl]-2-propanoic acid, 3-acetyl-4,6-dihydroxy- (CA INDEX NAME)



RN 860293-52-3 CAPLUS
CN 1,3-Dioxolane-4,5-dimethanol, 2-[(4,6-dihydroxy[1,1'-biphenyl]-2-yl)methyl]-, (4S,5S)- (CA INDEX NAME)

Absolute stereochemistry.

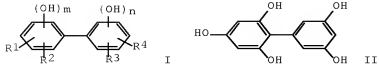


REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1991:196388 CAPLUS Full-text
DOCUMENT NUMBER: 114:196388
ORIGINAL REFERENCE NO.: 114:32930h,32931a
TITLE: Positive-working resist compositions
INVENTOR(S): Oie, Masayuki; Kaneko, Harumi; Mihira, Takayuki
PATENT ASSIGNEE(S): Nippon Zeon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02296247	A	19901206	JP 1989-118161	19890511
PRIORITY APPLN. INFO.:			JP 1989-118161	19890511

GI



AB The title compns. contain alkali-soluble phenol-containing resins and quinonediazidesulfonate esters of I (R1-4 = H, halo, alkyl, alkoxy; 5 ≤ m + n ≤ 6). These resists are suitable for pattern formation with ≤1-μm resolution Thus, a composition containing 100 parts 6:4 m-cresol-p-cresol novolak and 20 parts II ≥95% esterified with 1,2-naphthoquinonediazide-5-sulfonic acid was applied to a Si wafer and prebaked to obtain a 1.17-μm-thick resist layer. Patternwise exposure to g-line and development with aqueous Me4NOH gave a resist pattern with 0.45-μm lines and spaces and 1.15 μm thick. This pattern was used as a mask for dry etching in CF4 plasma.

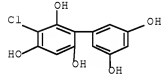
IT 133404-50-9
RL: USES (Uses)
(pos.-working photoresist containing phenolic resins and)

RN 133404-50-9 CAPLUS

CN 1-Naphthalenesulfonic acid, 6-diazo-5,6-dihydro-5-oxo-, ester with 3-chloro[1,1'-biphenyl]-2,3',4,5',6-pentol (9CI) (CA INDEX NAME)

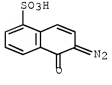
CM 1

CRN 199981-76-5
CMF C12 H9 Cl O5



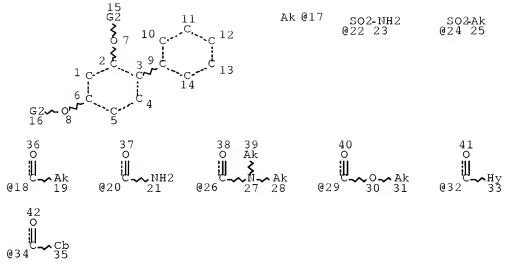
CM 2

CRN 20546-03-6
CMF C10 H6 N2 O4 S

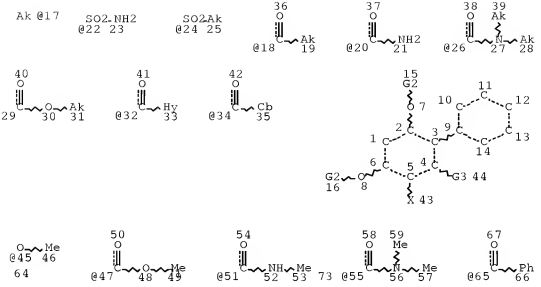


When nA is 1-5:

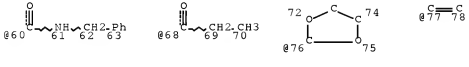
```
=> d que l19
L1                STR
```




```
VAR G2=H/17/18/20/22/24/26/29/32/34
NODE ATTRIBUTES:
CONNECT IS E2  RC AT   1
CONNECT IS X4  RC AT  19
CONNECT IS X4  RC AT  25
CONNECT IS X4  RC AT  28
CONNECT IS X4  RC AT  31
CONNECT IS E1  RC AT  33
CONNECT IS X4  RC AT  35
CONNECT IS X4  RC AT  39
DEFAULT MLEVEL IS ATOM
GGCAT   IS LOC  UNS  AT  17
GGCAT   IS LOC  SAT  AT  19
GGCAT   IS LOC  SAT  AT  25
GGCAT   IS LOC  SAT  AT  28
GGCAT   IS LOC  SAT  AT  31
GGCAT   IS UNS  AT  35
GGCAT   IS LOC  SAT  AT  39
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC   6   9
NUMBER OF NODES IS  42

STEREO ATTRIBUTES: NONE
L3          869 SEA FILE=REGISTRY SSS FUL L1
L7              STR
```



Page 1-A

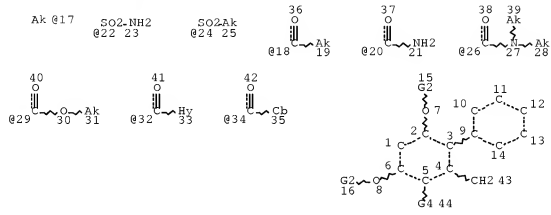


Page 2-A
VAR G2=H/17/18/20/22/24/26/29/32/34
VAR G3=OH/45/COOH/47/20/51/55/60/65/68/76/77
NODE ATTRIBUTES:
CONNECT IS E2 RC AT 1
CONNECT IS X4 RC AT 19
CONNECT IS X4 RC AT 25
CONNECT IS X4 RC AT 28
CONNECT IS X4 RC AT 31
CONNECT IS E1 RC AT 33
CONNECT IS X4 RC AT 35
CONNECT IS X4 RC AT 39
CONNECT IS E2 RC AT 73
CONNECT IS E2 RC AT 74
CONNECT IS E3 RC AT 76
DEFAULT MLEVEL IS ATOM
GGCAT IS LOC UNS AT 17
GGCAT IS LOC SAT AT 19
GGCAT IS LOC SAT AT 25
GGCAT IS LOC SAT AT 28
GGCAT IS LOC SAT AT 31
GGCAT IS UNS AT 35
GGCAT IS LOC SAT AT 39
DEFAULT ECLEVEL IS LIMITED

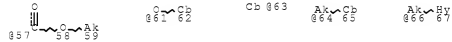
GRAPH ATTRIBUTES:
RSPEC 6 9

NUMBER OF NODES IS 78

STEREO ATTRIBUTES: NONE
L9 15 SEA FILE=REGISTRY SUB=L3 SSS FUL L7
L10 2 SEA FILE=CAPLUS SPE=ON ABB=ON PLU=ON L9
L12 STR



Page 1-A



Page 2-A
VAR G2=H/17/18/20/22/24/26/29/32/34
VAR G4=H/X/CN/NO2/45/46/48/49/NH2/52/55/COOH/57/61/63/64/66
NODE ATTRIBUTES:
CONNECT IS E2 RC AT 1
CONNECT IS X4 RC AT 19
CONNECT IS X4 RC AT 25
CONNECT IS X4 RC AT 28
CONNECT IS X4 RC AT 31
CONNECT IS E1 RC AT 33
CONNECT IS X4 RC AT 35
CONNECT IS X4 RC AT 39
CONNECT IS X4 RC AT 45
CONNECT IS X4 RC AT 47
CONNECT IS X4 RC AT 48
CONNECT IS X4 RC AT 50
CONNECT IS E1 RC AT 53
CONNECT IS E1 RC AT 54
CONNECT IS E1 RC AT 56
CONNECT IS X4 RC AT 59
CONNECT IS X4 RC AT 62
CONNECT IS X5 RC AT 63
CONNECT IS E2 RC AT 64

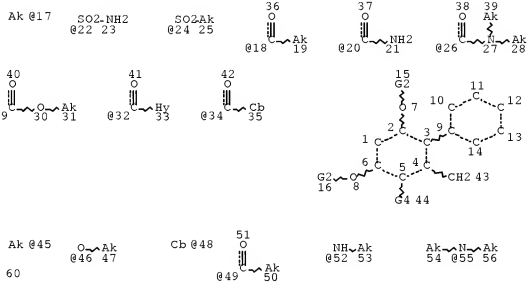
```
CONNECT IS X4  RC AT  65
CONNECT IS E2  RC AT  66
CONNECT IS X4  RC AT  67
DEFAULT MLEVEL IS ATOM
GGCAT   IS LOC  UNS  AT  17
GGCAT   IS LOC  SAT  AT  19
GGCAT   IS LOC  SAT  AT  25
GGCAT   IS LOC  SAT  AT  28
GGCAT   IS LOC  SAT  AT  31
GGCAT   IS UNS  AT  35
GGCAT   IS LOC  SAT  AT  39
GGCAT   IS LOC  AT  45
GGCAT   IS LOC  SAT  AT  47
GGCAT   IS SAT  AT  48
GGCAT   IS LOC  SAT  AT  50
GGCAT   IS LOC  SAT  AT  53
GGCAT   IS LOC  SAT  AT  54
GGCAT   IS LOC  SAT  AT  56
GGCAT   IS LOC  SAT  AT  59
GGCAT   IS UNS  AT  62
GGCAT   IS UNS  AT  63
GGCAT   IS SAT  AT  64
GGCAT   IS UNS  AT  65
GGCAT   IS SAT  AT  66
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC   6   9
NUMBER OF NODES IS  67

STEREO ATTRIBUTES: NONE
L14         322 SEA FILE=REGISTRY SUB=L3 SSS FUL L12
L15          39 SEA FILE=CAPLUS SPE=ON  ABB=ON  PLU=ON  L14
L17           1 SEA FILE=CAPLUS SPE=ON  ABB=ON  PLU=ON  L10 AND L15
L18           2 SEA FILE=CAPLUS SPE=ON  ABB=ON  PLU=ON  L17 OR L10
L19          38 SEA FILE=CAPLUS SPE=ON  ABB=ON  PLU=ON  L15 NOT L18


=> fil wpix
FILE 'WPIX' ENTERED AT 12:21:49 ON 24 DEC 2008
COPYRIGHT (C) 2008 THOMSON REUTERS

FILE LAST UPDATED:          22 DEC 2008   <20081222/UP>
MOST RECENT UPDATE:           200882      <200882/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE
>>> Now containing more than 1.2 million chemical structures in DCR <<<

>>> IPC Reform backfile reclassifications have been loaded to end of
    September 2008. No update date (UP) has been created for the
    reclassified documents, but they can be identified by 20060101/UPIC,
    and 20061231/UPIC, 20070601/UPIC, 20071001/UPIC, 20071130/UPIC,
    20080401/UPIC, 20080701/UPIC and 20081001/UPIC.
    ECLA reclassifications to mid August and US national classification
    mid September 2008 have also been loaded. Update dates 20080401,
    20080701 and 20081001/UPEC and /UPNC have been assigned to these. <<

FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf
```

FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://scientific.thomsonreuters.com/support/patents/coverage/latestupdates/

EXPLORE DERWENT WORLD PATENTS INDEX IN STN ANAVIST, VERSION 2.0:
http://www.stn-international.com/DWPIAnaVist2_0608.html

>>> HELP for European Patent Classifications see HELP ECLA, HELP ICO <<<

=> d que l24
L12 STR



Page 1-A

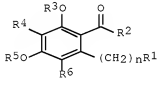
Page 2-A
VAR G2=H/17/18/20/22/24/26/29/32/34
VAR G4=H/X/CN/NO2/45/46/48/49/NH2/52/55/COOH/57/61/63/64/66
NODE ATTRIBUTES:
CONNECT IS E2 RC AT 1
CONNECT IS X4 RC AT 19
CONNECT IS X4 RC AT 25
CONNECT IS X4 RC AT 28
CONNECT IS X4 RC AT 31
CONNECT IS E1 RC AT 33
CONNECT IS X4 RC AT 35
CONNECT IS X4 RC AT 39
CONNECT IS X4 RC AT 45
CONNECT IS X4 RC AT 47
CONNECT IS X4 RC AT 48
CONNECT IS X4 RC AT 50
CONNECT IS E1 RC AT 53

```
CONNECT IS E1  RC AT  54
CONNECT IS E1  RC AT  56
CONNECT IS X4  RC AT  59
CONNECT IS X4  RC AT  62
CONNECT IS X5  RC AT  63
CONNECT IS E2  RC AT  64
CONNECT IS X4  RC AT  65
CONNECT IS E2  RC AT  66
CONNECT IS X4  RC AT  67
DEFAULT MLEVEL IS ATOM
GGCAT   IS LOC  UNS  AT  17
GGCAT   IS LOC  SAT  AT  19
GGCAT   IS LOC  SAT  AT  25
GGCAT   IS LOC  SAT  AT  28
GGCAT   IS LOC  SAT  AT  31
GGCAT   IS UNS  AT  35
GGCAT   IS LOC  SAT  AT  39
GGCAT   IS LOC  AT  45
GGCAT   IS LOC  SAT  AT  47
GGCAT   IS SAT  AT  48
GGCAT   IS LOC  SAT  AT  50
GGCAT   IS LOC  SAT  AT  53
GGCAT   IS LOC  SAT  AT  54
GGCAT   IS LOC  SAT  AT  56
GGCAT   IS LOC  SAT  AT  59
GGCAT   IS UNS  AT  62
GGCAT   IS UNS  AT  63
GGCAT   IS SAT  AT  64
GGCAT   IS UNS  AT  65
GGCAT   IS SAT  AT  66
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC   6   9
NUMBER OF NODES IS  67

STEREO ATTRIBUTES: NONE
L23          17 SEA FILE=WPIX SSS FUL L12
L24           3 SEA FILE=WPIX SPE=ON  ABB=ON  PLU=ON  L23/DCR


=> dup rem l19 l24
FILE 'CAPLUS' ENTERED AT 12:21:54 ON 24 DEC 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'WPIX' ENTERED AT 12:21:54 ON 24 DEC 2008
COPYRIGHT (C) 2008 THOMSON REUTERS
PROCESSING COMPLETED FOR L19
PROCESSING COMPLETED FOR L24
L34           39 DUP REM L19 L24 (2 DUPLICATES REMOVED)
                 ANSWERS '1-38' FROM FILE CAPLUS
                 ANSWER '39' FROM FILE WPIX

=> d l34 ibib abs hitstr tot

L34  ANSWER 1 OF 39  CAPLUS  COPYRIGHT 2008 ACS on STN DUPLICATE 1
ACCESSION NUMBER:         2006:845182  CAPLUS  Full-text
DOCUMENT NUMBER:          145:241713
```

TITLE: Antitumor agents containing benzoyl compounds
INVENTOR(S): Kanda, Yutaka; Soga, Shiro; Nakashima, Takayuki; Nara, Shinji; Nakagawa, Hiroshi; Shiotsu, Yukimasa
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan
SOURCE: PCT Int. Appl., 61pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006088193	A1	20060824	WO 2006-JP302996	20060221
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
AU 2006216031	A1	20060824	AU 2006-216031	20060221
CA 2599046	A1	20060824	CA 2006-2599046	20060221
EP 1852112	A1	20071107	EP 2006-714136	20060221
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				
MX 200709580	A	20070925	MX 2007-9580	20070808
CN 101123954	A	20080213	CN 2006-80005416	20070820
KR 2007104935	A	20071029	KR 2007-720933	20070913
IN 2007CN04135	A	20071116	IN 2007-CN4135	20070920
PRIORITY APPLN. INFO.:			JP 2005-44845 A	20050221
			WO 2006-JP2996 W	20060221
			WO 2006-JP302996 W	20060221
OTHER SOURCE(S):	MARPAT 145:241713			

GI



I

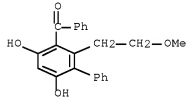
AB Disclosed is a therapeutic agent for a tumor selected from a hematopoietic tumor and a solid tumor, comprising, as the active ingredient, a benzoyl compound represented by the general formula I or a prodrug or pharmacol. acceptable salt thereof: I wherein n is an integer of 1 to 5; R1 represents a

substituted or unsubstituted lower alkoxy, a substituted or unsubstituted lower alkoxycarbonyl, CONR7R8 or the like; R2 represents a substituted or unsubstituted aryl or a substituted or unsubstituted aromatic heterocyclic group; R3 and R5 independently represent a hydrogen atom, a substituted or unsubstituted lower alkyl or the like; R4 represents a hydrogen atom, a hydroxy or a halogen; and R6 represents a hydrogen atom, a halogen, a substituted or unsubstituted lower alkyl or the like. For example, the antitumor activity of a compound I (R1 = CON(CH2CH2OH)2; n = 1; R2 = p-methoxyphenyl; R3, R4, R5 = H; R6 = Et) was in vitro tested.

IT 819810-77-0
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antitumor agents containing benzoyl compds.)

RN 819810-77-0 CAPLUS

CN Methanone, [4,6-dihydroxy-2-(2-methoxyethyl)[1,1'-biphenyl]-3-yl]phenyl- (CA INDEX NAME)



REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 2 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 2005:99354 CAPLUS Full-text

DOCUMENT NUMBER: 142:198068

TITLE: Preparation of aminopyrazoles as CHK1 checkpoint protein kinase inhibitors.

INVENTOR(S): Johnson, Michael David; Teng, Min; Zhu, Jinjiang

PATENT ASSIGNEE(S): Pfizer Inc., USA

SOURCE: PCT Int. Appl., 127 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005009435	A1	20050203	WO 2004-IB2397	20040714

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

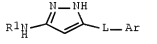
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,

SN, TD, TG

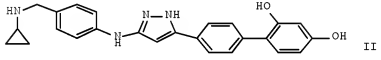
CA 2532231	A1	20050203	CA 2004-2532231		20040714
BR 2004012820	A	20060926	BR 2004-12820		20040714
JP 2006528661	T	20061221	JP 2006-521691		20040714
US 20050043381	A1	20050224	US 2004-897849		20040722
MX 2006PA00933	A	20060330	MX 2006-PA933		20060124
PRIORITY APPLN. INFO.:			US 2003-489976P	P	20030725
			WO 2004-IB2397	W	20040714

OTHER SOURCE(S): CASREACT 142:198068; MARPAT 142:198068

GI



I



II

AB Title compds. [I; L = 5-6 membered (substituted) heterocyclylene; Ar = 5-6 membered (substituted) (hetero)aryl; R1 = (substituted) aryl(alkyl), heterocyclyl(alkyl), cycloalkyl(alkyl), alkenyl, alkyl; R2 = H, halo, (substituted) alkyl], were prepared Thus, title compound (II) (preparation outlined) inhibited human CHK1 with Ki <1 nM.

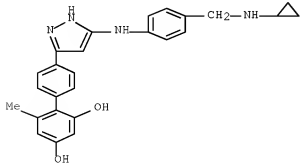
IT 838823-36-2P 838823-58-8P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

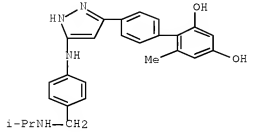
(claimed compound; preparation of aminopyrazoles as CHK1 checkpoint protein kinase inhibitors)

RN 838823-36-2 CAPLUS

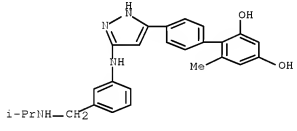
CN [1,1'-Biphenyl]-2,4-diol, 4'-[5-[[4-[(cyclopropylamino)methyl]phenyl]amino]-1H-pyrazol-3-yl]-6-methyl- (CA INDEX NAME)



RN 838823-58-8 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-methyl-4'-[5-[[4-[[(1-methylethyl)amino]methyl]phenyl]amino]-1H-pyrazol-3-yl]- (CA INDEX NAME)



IT 838824-28-5P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of aminopyrazoles as CHK1 checkpoint protein kinase inhibitors)
RN 838824-28-5 CAPLUS
CN [1,1'-Biphenyl]-2,4-diol, 6-methyl-4'-[3-[[3-[[(1-methylethyl)amino]methyl]phenyl]amino]-1H-pyrazol-5-yl]- (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

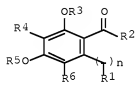
L34 ANSWER 3 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:14345 CAPLUS Full-text
DOCUMENT NUMBER: 142:93527
TITLE: Preparation of benzophenone derivatives as HSP90 inhibitors for treatment of tumor
INVENTOR(S): Nara, Shinji; Nakagawa, Hiroshi; Kanda, Yutaka; Nakashima, Takayuki; Soga, Shiro; Kajita, Jiro; Saito, Jun-ichi; Shiotsu, Yukimasa; Akinaga, Shiro
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan
SOURCE: PCT Int. Appl., 206 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

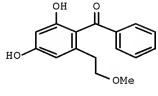
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005000778	A1	20050106	WO 2004-JP8494	20040610
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004251949	A1	20050106	AU 2004-251949	20040610
CA 2530374	A1	20050106	CA 2004-2530374	20040610
EP 1642880	A1	20060405	EP 2004-746022	20040610
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1791568	A	20060621	CN 2004-80013807	20040610
US 20070032532	A1	20070208	US 2005-561415	20051219
KR 2006023576	A	20060314	KR 2005-724914	20051226
PRIORITY APPLN. INFO.:			JP 2003-185475 A	20030627
			WO 2004-JP8494 W	20040610

OTHER SOURCE(S): MARPAT 142:93527

GI



I



II

AB The title compds. I [wherein n = 1–10; R1 = H, OH, CN, etc.; R2 = (un)substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl, or heteroaryl; R3 and R5 = independently H, (un)substituted alkyl, alkenyl, etc.; R4 and R6 = independently H, OH, halo, CN, etc.] or prodrugs or pharmaceutically acceptable salts thereof are prepared as heat-shock proteins (HSP) 90 inhibitors. For example, the compound II was prepared in a multi-step synthesis. II inhibited >30% human HSP90 at the concentration of 10 μM. I are useful as antitumor agents (no data).

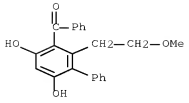
IT 819810-77-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(drug candidate; preparation of benzophenone derivs. as HSP90 inhibitors for treatment of tumor)

RN 819810-77-0 CAPLUS

CN Methanone, [4,6-dihydroxy-2-(2-methoxyethyl)[1,1'-biphenyl]-3-yl]phenyl- (CA INDEX NAME)



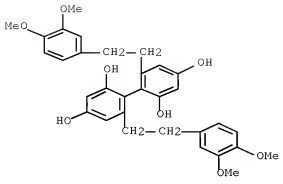
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 4 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:651500 CAPLUS Full-text
DOCUMENT NUMBER: 143:302464
TITLE: Constituents of Vittaria anguste-elongata and Their Biological Activities
AUTHOR(S): Wu, Pei-Lin; Hsu, Yu-Lin; Zao, Chen-Wei; Damu, Amooru G.; Wu, Tian-Shung
CORPORATE SOURCE: Department of Chemistry, National Cheng Kung University, Tainan, 701, Taiwan
SOURCE: Journal of Natural Products (2005), 68(8), 1180-1184 CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society-American Society of Pharmacognosy
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 143:302464

AB Twelve new compds., vittarin-A (1), -B (2), -C (3), -D (4), -E (5), -F (6), 3-O-acetylniduloic acid (7), Et 3-O-acetylniduloate (8), Me 4-O-coumaroylquinate (9), vittarilide-A (10), and -B (11), and vittariflavone (12), as well as 20 known compds. have been isolated from the whole plant of Vittaria anguste-elongata. The structures of these compds. were determined by spectroscopic and chemical transformation methods. 5,7-Dihydroxy-3',4',5'-trimethoxyflavone (18) displayed moderate cytotoxicity against human lung carcinoma and central nervous system carcinoma cell lines with inhibition of 89 and 61% at a concentration of 58 μM, resp. Vittarilide-A (10) and -B (11) and Et 4-O-caffeoylquinate (14) exhibited moderate DPPH radical scavenging activity with IC50 values of 91, 290, and 234 μM, resp.

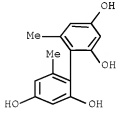
IT 864512-88-9P, Vittarin E
RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(constituents of Vittaria anguste-elongata and their biol. activities)

RN 864512-88-9 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-bis[2-(3,4-dimethoxyphenyl)ethyl]- (CA INDEX NAME)



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

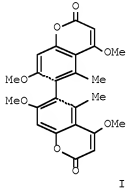
L34 ANSWER 5 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:202747 CAPLUS Full-text
DOCUMENT NUMBER: 142:176721
TITLE: Product subclass 2: one oxygen and one nitrogen or phosphorus atom
AUTHOR(S): Ulrich, H.
CORPORATE SOURCE: Guilford, CT, 06437, USA
SOURCE: Science of Synthesis (2004), 17, 55-115
CODEN: SSCYJ9
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Methods for preparing six-membered heteroatoms containing two unlike heteroatoms selected from O, N, or P are reviewed including cyclization, ring transformation, aromatization, and substituent modification.
IT 4946-96-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of six-membered heteroatoms containing two unlike heteroatoms selected from O, N, or P via cyclization, ring transformation, aromatization, and substituent modification)
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



REFERENCE COUNT: 214 THERE ARE 214 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 6 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:261182 CAPLUS Full-text
DOCUMENT NUMBER: 137:140357
TITLE: Novel concepts in directed biaryl synthesis, 97. Atropo-enantioselective synthesis of the natural bicoumarin (+)-isokotanin A via a configurationally stable biaryl lactone
AUTHOR(S): Bringmann, Gerhard; Hinrichs, Jurgen; Henschel, Petra; Kraus, Jurgen; Peters, Karl; Peters, Eva-Maria
CORPORATE SOURCE: Institut fur Organische Chemie, Universitat Wurzburg, Wurzburg, 97074, Germany
SOURCE: European Journal of Organic Chemistry (2002), (6), 1096-1106
CODEN: EJOCFK; ISSN: 1434-193X
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 137:140357
GI

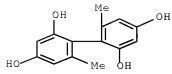


I

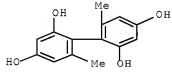
AB The atropo-enantioselective total synthesis of the axially chiral bicoumarin (+)-isokotanin A (I) is described. Key steps were the formation of a configurationally stable seven-membered biaryl lactone and its kinetic resolution by atroposelective ring cleavage. The previous assignment of the absolute configuration (M-atropoisomer) of I (and its synthetic precursors) was confirmed by quantum chemical CD calcns.

IT 21255-80-1P 54440-25-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and optical rotation of; atropoenantioselective synthesis of natural bicoumarin (+)-isokotanin A via configurationally stable biaryl lactone)

RN 21255-80-1 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-, (1S)- (9CI) (CA INDEX NAME)



RN 54440-25-4 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-, (1R)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 65 THERE ARE 65 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 7 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:722713 CAPLUS Full-text
DOCUMENT NUMBER: 134:29229
TITLE: Formal synthesis of both atropisomers of desertorin C and an example of chirality transfer from a biphenyl axis to a spiro center and its reverse
AUTHOR(S): Baker, Robert W.; Kyasnoor, Rekha V.; Sargent, Melvyn V.; Skelton, Brian W.; White, Allan H.
CORPORATE SOURCE: School of Chemistry, University of Sydney, Sydney, 2006, Australia
SOURCE: Australian Journal of Chemistry (2000), 53(6), 487-506
CODEN: AJCHAS; ISSN: 0004-9425
PUBLISHER: CSIRO Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 134:29229
GI

I

AB In connection with the synthesis of 4,4',7,7'-tetramethoxy-5,5'-dimethyl-6,8'-bicoumarin (desertorin C) in enantiopure form, the diastereomeric ratios of the products of the reactions between 2-isopropyloxy-6-methoxy-4-methylphenylmagnesium bromide and (4S)-4-isopropyl-2-(2,3,5-trimethoxyphenyl)-

4,5-dihydrooxazole, between 2,4-dimethoxy-6-methylphenylmagnesium bromide and (4S)-4-isopropyl-2-(2,3-dimethoxy-5-methylphenyl)-4,5-dihydrooxazol, and between 2,4-dimethoxy-6-(t-butyldimethylsilyloxy)methylphenylmagnesium bromide and the oxazole (I) were explored. The major product of the last mentioned reaction was converted into (S,4S)-4-isopropyl-2-(2'-hydroxymethyl-4',6,6'-trimethoxy-4-methyl-1,1'- biphenyl-6-yl)-4,5-dihydroxazole, the axial configuration of which was confirmed by single crystal X-ray structural determination The similar product (S,4S)-2-(2',4',6-trimethoxy-4,6'-dimethyl-1,1'-biphenyl-6-yl)-4,5- dihydrooxazole was converted into (S)-1-(2,4',6'-trimethoxy-4,6'-biphenyl- 2-yl)ethanone (II) which furnished (S)-1-(2',4',6-trimethoxy-4,6'-dimethyl-1,1'-biphenyl-2-yl)acetamide (43%) and (S)-2,7'-dimethoxy-3',5',6-trimethyl-spiro[cyclohexa-2,5-die ne-1,1'-(1H)isoindole]-4-one (III) (30%) on Schmidt rearrangement. III on reduction and methylation regenerated II. The methodol. of Lipschutz was adapted for the synthesis of both enantiomers of 1,1'-(2',4-dihydroxy-6,6'-dimethoxy-2,4'-dimethylbiphenyl-3,3' -diyl)bisethanone which constitutes a formal synthesis of both enantiomers of desertorin C.

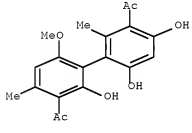
IT 220556-23-0P 312263-57-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(formal synthesis of both atropisomers of desertorin C and an example of chirality transfer from a biphenyl axis to a spiro center and its reverse)

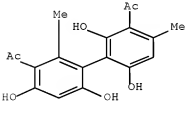
RN 220556-23-0 CAPLUS

CN Ethanone, 1,1'-[(1R)-2,4',6'-trihydroxy-6-methoxy-2',4-dimethyl[1,1'-biphenyl]-3,3'-diyl]bis- (9CI) (CA INDEX NAME)



RN 312263-57-3 CAPLUS

CN Ethanone, 1,1'-[(1R)-2,4',6,6'-tetrahydroxy-2',4-dimethyl[1,1'-biphenyl]-3,3'-diyl]bis- (9CI) (CA INDEX NAME)



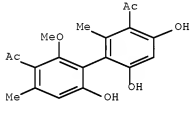
REFERENCE COUNT: 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 8 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:776061 CAPLUS Full-text
DOCUMENT NUMBER: 130:182277
TITLE: A formal synthesis of both atropenantiomers of desertorin C
AUTHOR(S): Kyasnoor, Rekha V.; Sargent, Melvyn V.
CORPORATE SOURCE: Department of Chemistry, University of Western Australia, Nedlands, 6907, Australia
SOURCE: Chemical Communications (Cambridge) (1998), (24), 2713-2714
CODEN: CHCOFS; ISSN: 1359-7345
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 130:182277

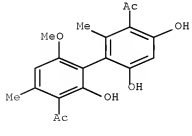
AB Asym. synthesis of both enantiomers of 1,1'-(2',4-dihydroxy-6,6'-dimethoxy-2,4'-dimethylbiphenyl-3,3'- diyl)bisethanone allows the formal synthesis of both enantiomers of desertorin C, i.e. 4,4',7,7'-tetramethoxy-5,5'-dimethyl-6,8'- bicoumarin.

IT 220556-22-9P 220556-23-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(formal synthesis of both atropenantiomers of desertorin C)

RN 220556-22-9 CAPLUS
CN Ethanone, 1,1'-[(1S)-4,6,6'-trihydroxy-2'-methoxy-2,4'-dimethyl[1,1'-biphenyl]-3,3'-diyl]bis- (9CI) (CA INDEX NAME)

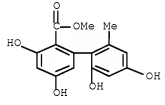


RN 220556-23-0 CAPLUS
CN Ethanone, 1,1'-[(1R)-2,4',6'-trihydroxy-6-methoxy-2',4-dimethyl[1,1'-biphenyl]-3,3'-diyl]bis- (9CI) (CA INDEX NAME)



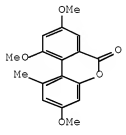
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 9 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1996:601196 CAPLUS Full-text
DOCUMENT NUMBER: 125:269955
ORIGINAL REFERENCE NO.: 125:50305a
TITLE: The screening of Alternaria alternata and Alternaria solani for alternariol and alternariol methyl ether toxigenicity strains
AUTHOR(S): Kuang, Kaiyuan; Shi, Shiying; Luo, Yi; Fong, Jianlin
CORPORATE SOURCE: Inst. Plant Protection, Shanghai Acad. Agricultural Scis., Shanghai, 201106, Peop. Rep. China
SOURCE: Zhenjun Xuebao (1996), 15(2), 109-113
CODEN: ZHXUET; ISSN: 0256-1883
PUBLISHER: Kexue
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB 96 Alternaria strains isolated from diseased rinds of wheat, potato and eggplant were screened for toxigenicity of alternariol (AOH) and its's Me ether (AME) by the growth inhibition of Bacillus mycoides. 48 Strains (50%) exhibited toxic effects on B. mycoides. Examined by HPLC, 13 among 18 strains with moderate to high toxicity produced AOH and AME. More A. solani strains were toxic, but A. alternata produces more toxin. The most productive A. alternata XA-8 and A. solani SA-10 strains produced 280 and 95.5mg/kg AOH, and 5140 and 94.3 mg/kg AME.
IT 182259-28-5P
RL: ADV (Adverse effect, including toxicity); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(screening of Alternaria alternata and Alternaria solani for alternariol and alternariol Me ether toxigenicity strains)
RN 182259-28-5 CAPLUS
CN [1,1'-Biphenyl]-2-carboxylic acid, 2',3,4',5-tetrahydroxy-6'-methyl-, methyl ester (CA INDEX NAME)

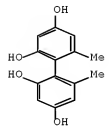


L34 ANSWER 10 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1991:607611 CAPLUS Full-text
DOCUMENT NUMBER: 115:207611
ORIGINAL REFERENCE NO.: 115:35413a,35416a
TITLE: Novel concepts in directed biaryl synthesis. 4. Diastereoselective ring opening of achiral bridged biaryls using chiral O- and N-nucleophiles: first atropo-enantioselective synthesis of (-)-4,4'-bis(orcinol)
AUTHOR(S): Bringmann, Gerhard; Walter, Rainer; Ewers, Christian L. J.
CORPORATE SOURCE: Inst. Org. Chem., Univ. Wuerzburg, Wuerzburg, D-8700, Germany
SOURCE: Synlett (1991), (8), 581-3

CODEN: SYNLES; ISSN: 0936-5214
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 115:207611
GI



I



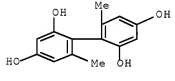
II

AB The atropisomer-selective cleavage of the bridged biaryl I, which has no stereogenic element, is described. The directed ring opening of the lactone bridge is achieved with chiral O- or N- nucleophiles, i.e., by external asym. induction. The application of this novel process to the 1st atropo-enantioselective synthesis of the constitutionally sym., known (-)-4,4'-bis(orcinol) II is described.

IT 21255-80-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 21255-80-1 CAPLUS

CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-, (1S)- (9CI) (CA INDEX NAME)



L34 ANSWER 11 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1992:112682 CAPLUS Full-text
DOCUMENT NUMBER: 116:112682
ORIGINAL REFERENCE NO.: 116:18931a,18934a
TITLE: Analysis of differential scanning calorimetric data for reactive chemicals
AUTHOR(S): Ando, T.; Fujimoto, Y.; Morisaki, S.
CORPORATE SOURCE: Res. Inst. Ind. Saf., Minist. Labour, Kiyose, Japan
SOURCE: Journal of Hazardous Materials (1991), 28(3), 251-80
CODEN: JHMAD9; ISSN: 0304-3894
DOCUMENT TYPE: Journal
LANGUAGE: English

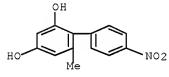
AB Results of DSC measurements of reactive chems. are presented. Exothermic onset temps. (To) and heats of decomposition (Q) for chems. were analyzed to see if it is possible to classify thermal hazards based on the factors. The

values of the 2 factors, which were widely and uniformly distributed, were independent of each other, based on statistical considerations. It is possible to classify and to predict the thermal hazards of reactive chems. by 2-dimensional representation in terms of To and Q. The reactive chems. were classified into 28 types according to the functional groups. The effects of sample cell type (pinhole cell and sealed cell) and cell material on DSC results are outlined.

IT 139139-02-9
RL: PRP (Properties)
(thermal hazard of, estimation of, DSC in)

RN 139139-02-9 CAPLUS

CN [1,1'-Biphenyl]-2,4-diol, 6-methyl-4'-nitro- (CA INDEX NAME)



L34 ANSWER 12 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1985:592864 CAPLUS Full-text

DOCUMENT NUMBER: 103:192864

ORIGINAL REFERENCE NO.: 103:31000h,31001a

TITLE: Microbial transformation of olivetol by Fusarium roseum

AUTHOR(S): McClanahan, Robert H.; Robertson, Larry W.

CORPORATE SOURCE: Coll. Pharm., Ohio State Univ., Columbus, OH, 43210, USA

SOURCE: Journal of Natural Products (1985), 48(4), 660-3
CODEN: JNPRDF; ISSN: 0163-3864

DOCUMENT TYPE: Journal

LANGUAGE: English

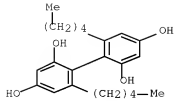
OTHER SOURCE(S): CASREACT 103:192864

AB In a study of pathways of metabolism of cannabinoids by microorganisms, in which olivetol served as an exptl. model of the n-pentylresorcinol moiety, F. roseum appeared to metabolize only the aromatic portion of the mol. F. roseum Was capable of biotransforming olivetol to form metabolites both more and less polar than the starting material. After a time-course study indicated the optimal length of incubation, a prepare-scale fermentation was performed to isolate sufficient quantities of metabolites for structure determination Two metabolites of olivetol were isolated and identified as mono-Me olivetol and 2,2',4,4'-tetrahydroxy-6,6'-dipentylbiphenyl.

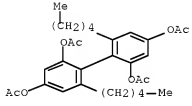
IT 98985-63-8
RL: FORM (Formation, nonpreparative)
(formation of, by Fusarium roseum, in biotransformation of olivetol)

RN 98985-63-8 CAPLUS

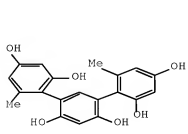
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dipentyl- (CA INDEX NAME)



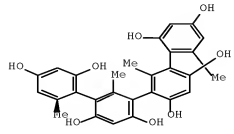
IT 98985-64-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 98985-64-9 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dipentyl-, 2,2',4,4'-tetraacetate
(CA INDEX NAME)



L34 ANSWER 13 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1979:419739 CAPLUS Full-text
DOCUMENT NUMBER: 91:19739
ORIGINAL REFERENCE NO.: 91:3293a,3296a
TITLE: The absolute configuration and optical rotation of ter- and quaterphenyl derivatives of orcin
AUTHOR(S): Hess, Heinrich; Musso, Hans
CORPORATE SOURCE: Inst. Org. Chem., Univ. Karlsruhe, Karlsruhe, D-7500/1, Fed. Rep. Ger.
SOURCE: Liebigs Annalen der Chemie (1979), (3), 431-7
CODEN: LACHDL; ISSN: 0170-2041
DOCUMENT TYPE: Journal
LANGUAGE: German
GI



I

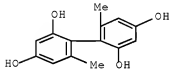


II

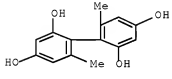
AB The relative and absolute configuration of optical isomers of terphenyl derivs. I and quaterphenyl derivs. II, obtained from orcinol by oxidative coupling were determined

IT 21255-80-1 54440-25-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidative coupling of, with orcinol, configuration of optical isomers from)

RN 21255-80-1 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-, (1S)- (9CI) (CA INDEX NAME)

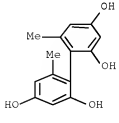


RN 54440-25-4 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-, (1R)- (9CI) (CA INDEX NAME)

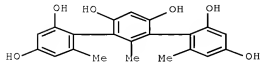


IT 4946-96-7P 54440-26-5P 54440-29-8P
54483-11-3P 54483-14-6P 54483-17-9P
54483-21-5P 67314-20-9P 67314-21-0P
67314-22-1P 67314-23-2P 67314-24-3P
67314-25-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

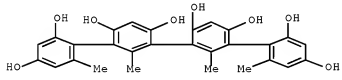
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



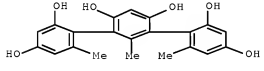
RN 54440-26-5 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-, (R*,R*)- (9CI) (CA INDEX NAME)



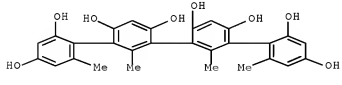
RN 54440-29-8 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, (R*,R*,R*)- (9CI) (CA INDEX NAME)



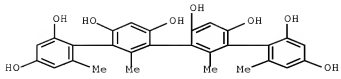
RN 54483-11-3 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-, (R*,S*)- (9CI) (CA INDEX NAME)



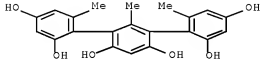
RN 54483-14-6 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



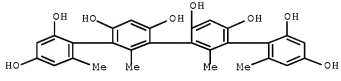
RN 54483-17-9 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, (R*,S*,S*)- (9CI) (CA INDEX NAME)



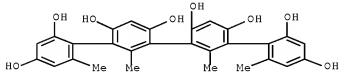
RN 54483-21-5 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-, stereoisomer (9CI) (CA INDEX NAME)



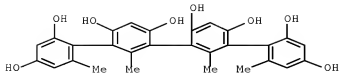
RN 67314-20-9 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



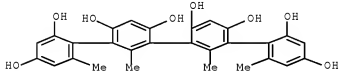
RN 67314-21-0 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



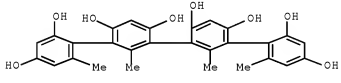
RN 67314-22-1 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



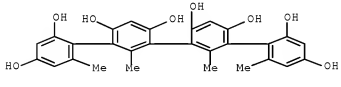
RN 67314-23-2 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



RN 67314-24-3 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



RN 67314-25-4 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



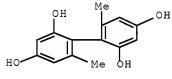
L34 ANSWER 14 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1978:563181 CAPLUS Full-text
DOCUMENT NUMBER: 89:163181
ORIGINAL REFERENCE NO.: 89:25281a,25284a
TITLE: Complete separation of enantiomers by chromatography on potato starch

AUTHOR(S): Hess, Heinrich; Burger, Guenther; Musso, Hans
CORPORATE SOURCE: Inst. Org. Chem., Univ. Karlsruhe, Karlsruhe, Fed. Rep. Ger.
SOURCE: Angewandte Chemie (1978), 90(8), 645-6
CODEN: ANCEAD; ISSN: 0044-8249
DOCUMENT TYPE: Journal
LANGUAGE: German

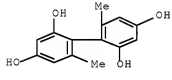
AB Six enantiomeric mixts., e.g., (±)-6,6'-dinitrodiphenic acid and (±)-6,6'-dimethyl-2,2',4,4'-biphenyltetrol, were completely separation by liquid chromatog. in a potato starch-filled column, using aqueous buffer solns. as eluents; the proper choice and concentration of buffer solution was important.

IT 21255-80-1P 54440-25-4P 54440-26-5P
54483-11-3P 54483-21-5P 67314-20-9P
67314-21-0P 67314-23-2P 67314-24-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

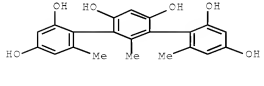
RN 21255-80-1 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-, (1S)- (9CI) (CA INDEX NAME)



RN 54440-25-4 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-, (1R)- (9CI) (CA INDEX NAME)

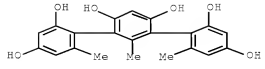


RN 54440-26-5 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-, (R*,R*)- (9CI) (CA INDEX NAME)

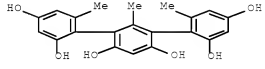


RN 54483-11-3 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-,

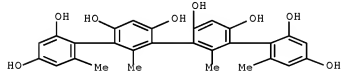
(R*,S*)- (9CI) (CA INDEX NAME)



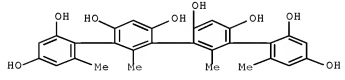
RN 54483-21-5 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-, stereoisomer (9CI) (CA INDEX NAME)



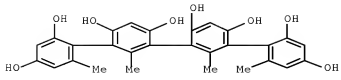
RN 67314-20-9 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



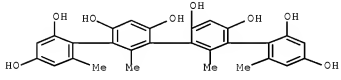
RN 67314-21-0 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



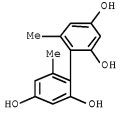
RN 67314-23-2 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



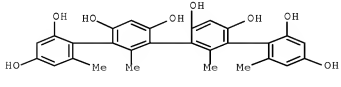
RN 67314-24-3 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



IT 4946-96-7 54440-29-8 54483-14-6 67314-25-4
RL: PROC (Process)
(resolution of, by chromatog. on potato starch column)
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)

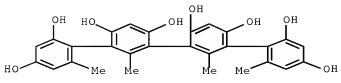


RN 54440-29-8 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, (R*,R*,R*)- (9CI) (CA INDEX NAME)

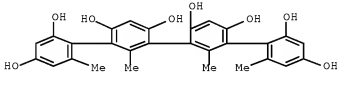


RN 54483-14-6 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol,

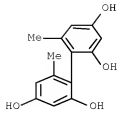
2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



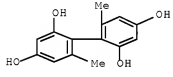
RN 67314-25-4 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



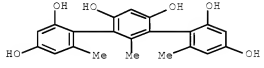
L34 ANSWER 15 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1975:57470 CAPLUS Full-text
DOCUMENT NUMBER: 82:57470
ORIGINAL REFERENCE NO.: 82:9187a,9190a
TITLE: Oxidation of orcinol with potassium hexacyanoferrate(III) in a flow system
AUTHOR(S): Haynes, Richard K.; Hess, Heinrich; Musso, Hans
CORPORATE SOURCE: Inst. Org. Chem., Univ. Karlsruhe, Karlsruhe, Fed. Rep. Ger.
SOURCE: Chemische Berichte (1974), 107(12), 3733-48
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: German
GI For diagram(s), see printed CA Issue.
AB In contrast to static conditions oxidation of orcinol (I) by alkaline K3Fe(CN)6 in a flow system gave 35% dimer II (R = H) (III), smaller amts. of stereoisomeric trimers II [R = 6,2,4-Me(HO)2-C6H2] and stereoisomeric tetramers II [R = 3,2,4,6-R1Me(HO)2-C6H, R1 = 6,2,4-Me(HO)2C6H2] (IV) and practically no polymers. Similarly, III gave 50% mixture of all diastereomeric IV. The exclusive o,o'-coupling found in all products was related to the spin distribution of the unpaired electron in the radical of I.
IT 4946-96-7P 54440-25-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and oxidation of)
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



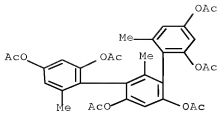
RN 54440-25-4 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-, (1R)- (9CI) (CA INDEX NAME)



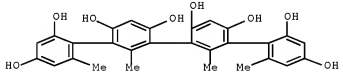
IT 54440-26-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and resolution of)
RN 54440-26-5 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-, (R*,R*)- (9CI) (CA INDEX NAME)



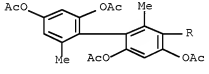
IT 54440-27-6P 54440-29-8P 54440-30-1P
54483-11-3P 54483-12-4P 54483-14-6P
54483-15-7P 54483-17-9P 54483-18-0P
54483-21-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 54440-27-6 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-, hexaacetate, (R*,R*)- (9CI) (CA INDEX NAME)

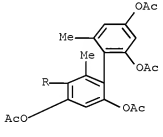


RN 54440-29-8 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, (R*,R*,R*)- (9CI) (CA INDEX NAME)

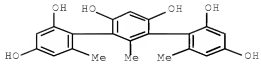


RN 54440-30-1 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, octaacetate, (R*,R*,R*)- (9CI) (CA INDEX NAME)

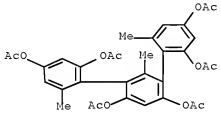




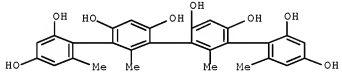
RN 54483-11-3 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-, (R*,S*)- (9CI) (CA INDEX NAME)



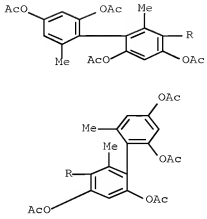
RN 54483-12-4 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-, hexaacetate, (R*,S*)- (9CI) (CA INDEX NAME)



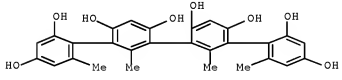
RN 54483-14-6 CAPLUS
CN [1,1':3',1''':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, stereoisomer (9CI) (CA INDEX NAME)



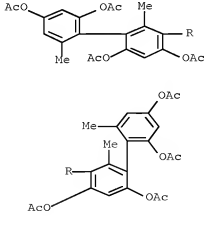
RN 54483-15-7 CAPLUS
CN [1,1':3',1''':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, octaacetate, stereoisomer (9CI) (CA INDEX NAME)



RN 54483-17-9 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, (R*,S*,S*)- (9CI) (CA INDEX NAME)

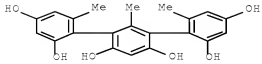


RN 54483-18-0 CAPLUS
CN [1,1':3',1'':3'',1'''-Quaterphenyl]-2,2''',4,4',4'',4''',6',6''-octol, 2',2'',6,6'''-tetramethyl-, octaacetate, (R*,S*,S*)- (9CI) (CA INDEX NAME)



RN 54483-21-5 CAPLUS
CN [1,1':3',1''-Terphenyl]-2,2'',4,4',4'',6'-hexol, 2',6,6''-trimethyl-,

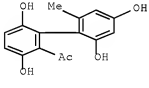
stereoisomer (9CI) (CA INDEX NAME)



L34 ANSWER 16 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1971:435291 CAPLUS Full-text
DOCUMENT NUMBER: 75:35291
ORIGINAL REFERENCE NO.: 75:5573a,5576a
TITLE: New synthesis of substituted arylquinones by means of electrophilic substitution of phenols, phenol ethers, aromatic amines, and aromatic hydrocarbons by negatively substituted 1,4-benzoquinones
AUTHOR(S): Kuser, P.; Inderbitzin, M.; Brauchli, J.; Eugster, C. H.
CORPORATE SOURCE: Org.-Chem. Inst., Univ. Zurich, Zurich, Switz.
SOURCE: Helvetica Chimica Acta (1971), 54(4), 980-95
CODEN: HCACAV; ISSN: 0018-019X
DOCUMENT TYPE: Journal
LANGUAGE: German

AB Arylbenzohydroquinones and arylquinones, depending on the redox potential, were obtained together with 2-acetylbenzohydroquinone when 2-acetyl-1,4-benzoquinone (I) or 2-methoxycarbonyl-1,4-benzoquinone were treated with phenols, phenol ethers, amines, or hydrocarbons, in the presence of acid catalyst, preferably HOAc, H2CO2, F3CCO2H, or silica. Reaction of I with orcin gave 2-acetyl-3,3',6,6'-tetrahydroxy-2'- methylbiphenyl, which was oxidized to 2-acetyl-3-(2,4-dihydroxy-6-methylphenyl)-1,4-benzoquinone with Ag2O. 2-Acetyl-3-(4-methoxy-2-methylphenyl)-1,4-benzoquinone was obtained directly and intermediate isolation of the hydroquinone was not possible. Thirteen other hydroquinones and 23 quinones were similarly prepared

IT 32546-66-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 32546-66-0 CAPLUS
CN Ethanone, 1-(2',3,4',6-tetrahydroxy-6'-methyl[1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



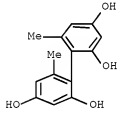
L34 ANSWER 17 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1972:2525 CAPLUS Full-text
DOCUMENT NUMBER: 76:2525
ORIGINAL REFERENCE NO.: 76:469a,472a

TITLE: Antiseptics for foods. LXXII. Diphenyl ether derivatives, biphenyl derivatives, and dibenzofuran derivatives as a preservative for sake
AUTHOR(S): Fujikawa, Fukujiro; Hirayama, Teruhisa; Nakamura, Yukio; Matsuo, Sachio; Mizutani, Takayuki; Mikawa, Toyoaki; Suzuki, Mitsuko; Doi, Mieko; Niki, Chiyo; Toyota, Takeshi
CORPORATE SOURCE: Kyoto Coll. Pharm., Kyoto, Japan
SOURCE: Yakugaku Zasshi (1971), 91(9), 930-3
CODEN: YKKZAJ; ISSN: 0031-6903
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB Antibacterial tests against Bacillus saprogenes, which causes putrefaction of sake, were carried out on 22 diphenyl ether compds., 2 dibenzofuran compds., and 4 biphenyl compds. In diphenyl ether compds., 4 compds. with an OH group in 1 benzene ring and a Me in the other benzene ring, such as 2-hydroxy-2'-methyldiphenyl ether and 4-hydroxy-4'-methyldiphenyl ether, and a compound with a formyl and an OH in the same benzene ring, such as 4-formyl-2-hydroxydiphenyl ether, had antibacterial activity 4-8-fold that of salicylic acid and 2-4-fold that of Bu p-hydroxybenzoate. Substitution of the Me group with carboxyl lowered the antibacterial activity. In biphenyl derivs., 2,2'- and 4,4'-di-hydroxybiphenyl had antibacterial activity 8-fold that of salicylic acid and 4-fold that of Bu p-hydroxybenzoate. Increasing nos. of OH groups lowered antibacterial activity. In dibenzofuran compds., 3,7-dihydroxydibenzofuran had twice the antibacterial activity of salicylic acid and was about comparable to Bu p-hydroxybenzoate. 3,7-Dihydroxy-1,9-dimethyldibenzofuran increased the antibacterial activity to 8-fold that of salicylic acid and 4-fold that of Bu p-hydroxybenzoate, showing that increased Me groups resulted in stronger antibacterial activity.

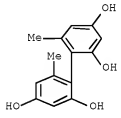
IT 4946-96-7
RL: BIOL (Biological study)
(Bacillus saprogenes inhibition by)

RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)

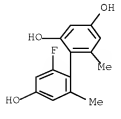


L34 ANSWER 18 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1968:101679 CAPLUS Full-text
DOCUMENT NUMBER: 68:101679
ORIGINAL REFERENCE NO.: 68:19623a,19626a
TITLE: Chromatographic separation of antipodes of biphenyl derivatives
AUTHOR(S): Steckelberg, Willi; Bloch, Michael; Musso, Hans
CORPORATE SOURCE: Ruhr Univ. Bochum, Bochum, Fed. Rep. Ger.
SOURCE: Chemische Berichte (1968), 101(4), 1519-21
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal

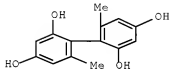
LANGUAGE: German
AB The title sepns. were carried out on potato starch with aqueous pH 7 buffer eluant, or on cellulose 21/2-acetate with benzene-AcOH eluant. OH, MeO, and Me-substituted, and quinonoid derivs. were separated
IT 4946-96-7
RL: ANST (Analytical study)
(chromatog. and polarimetry of)
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



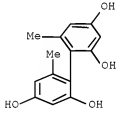
L34 ANSWER 19 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1968:115673 CAPLUS Full-text
DOCUMENT NUMBER: 68:115673
ORIGINAL REFERENCE NO.: 68:22323a,22326a
TITLE: Orcein dyes. XXVI. Synthesis, configuration, and spectra optical rotary dispersion-circular dichroism of optically active orcein dyes
AUTHOR(S): Musso, Hans; Steckelberg, Willi
CORPORATE SOURCE: Ruhr Univ. Bochum, Bochum, Fed. Rep. Ger.
SOURCE: Chemische Berichte (1968), 101(4), 1510-18
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: German
AB Only the (R)(+)-β-components, β-hydroxyorcein, β-aminoorcein, and β-aminoorceimine, were obtained from (R)(+)-2,4,6-Me(MeO)(H2N)C6H2C6H2(NH2)(OMe)Me-2,4,6 via (R)(+)-2,4,6-Me(HO)2C6H2C6H2(OH)2Me-2,4,6 indicating that the Me groups in the orcein residue are trans in the β-component and cis in the γ-component. The Cotton effect of the long wavelength absorptions in these dyes is relatively weak, since the sym. phenoxazone chromophore is only made unsym. by the chiralic bonding axes in the orcein residue.
IT 18011-61-5P 21255-80-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 18011-61-5 CAPLUS
CN [1,1'-Biphenyl]-2,4,4'-triol, 2'-fluoro-6,6'-dimethyl- (CA INDEX NAME)



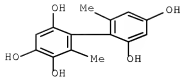
RN 21255-80-1 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-, (1S)- (9CI) (CA INDEX NAME)



L34 ANSWER 20 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1968:21373 CAPLUS Full-text
DOCUMENT NUMBER: 68:21373
ORIGINAL REFERENCE NO.: 68:4071a,4074a
TITLE: Autoxidation rate and redox potential of hydroquinone, pyrocatechol, and resorcinol derivatives
AUTHOR(S): Musso, Hans; Doepp, Heinrike
CORPORATE SOURCE: Ruhr-Univ., Bochum, Fed. Rep. Ger.
SOURCE: Chemische Berichte (1967), 100(11), 3627-43
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: German
AB The logarithm of the autoxidn. half-life time increased linearly with the redox potential for alkyl-substituted 1,4- and 1,3-C6H4(OH)2 and for alkyl-substituted 1,2,4-C6H3(OH)3.
IT 4946-96-7 4947-12-0
RL: PRP (Properties)
(autoxidn. and redox potential of)
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)

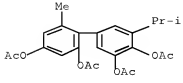


RN 4947-12-0 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4',5-pentol, 6,6'-dimethyl- (CA INDEX NAME)

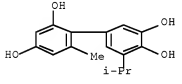


L34 ANSWER 21 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1967:54754 CAPLUS Full-text
DOCUMENT NUMBER: 66:54754
ORIGINAL REFERENCE NO.: 66:10299a,10302a
TITLE: Oxidative condensation of catechols and resorcinols
AUTHOR(S): Waiss, Anthony C., Jr.; Kuhnle, J. A.; Windle, John J.; Wiersema, A. K.
CORPORATE SOURCE: Western Regional Res. Lab., U.S. Dep. of Agr., Albany, CA, USA
SOURCE: Tetrahedron Letters (1966), (50), 6251-5
CODEN: TELEAY; ISSN: 0040-4039
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB cf. CA 60, 13119e. Equimolar (0.01M) solns. of 1,2,3(OH)2C6H3Pr-iso and 2,5-(HO)2C6H3Me stirred with 1.0N NaOH in the presence of air rapidly turned green and gave a relatively stable (half-life >24 hrs.) free radical signal in the E.P.R. spectrum. The total extracted phenolic mixture treated with Me3SiSiMe3 and the product analyzed by vapor phase chromatography showed the presence of only one product (I, R = H) (II) and the hydrolyzate of the trimethylsilyl ether (I, R = SiMe3) (III) gave an E.P.R. peak identical with that of the main product II. III, C25O4004Si3, λ 313, 303, 295, 259 mμ (C6H12) showed N.M.R. signals at τ 8.63 d, 6.47 heptet (J 7.0), 3.53, 3.24 d (J 2.0), 7.39 s, 2.88 s. III heated with Ac2O and KOAc gave the corresponding acetate I (R = Ac), C22H22O7, m. 179-80°. The condensation was repeated in a limited supply of air, quenched with acid after 10 sec. and the trimethylsilyl ethers of the products analyzed by vapor phase chromatography to show the presence of 2 major product peaks corresponding to III and the trimethylsilyl ether (IV, R = SiMe3) (V) of the biphenyl derivative IV (R = H) (VI). Both V and the corresponding acetate IV (R = Ac) showed N.M.R. signals for 2 pairs of meta proton doublets, conclusively demonstrating the position of the C-C linkage in IV. The isolation of VI as an intermediate limits the structure of the dibenzofuran to I and an alternate (VII), which was excluded since the dibenzofuran gave a neg. Gibbs test. The E.P.R. spectrum of the radical anion of II consists of a quartet with intensity ratios 1:3:3:1 due to a hyperfine coupling to 3 equivalent protons with a coupling constant 1.22 oe. Each of these lines is split into a doublet by a single proton with a coupling constant 0.56 oe., and each of these is again split into 3 lines with intensity ratios 1:2:1 and coupling constant 0.13 oe., indicating coupling to 2 equivalent protons. The hyperfine couplings were assigned with the aid of deuterium analogs. The quartet was assigned to the Me group, the doublet to H-9, and the triplet to H-2 and H-4. No hyperfine coupling from the iso-Pr group was observed. The formation of dibenzofuran through mixed condensation reaction of catechols and resorcinols was found to be quite general though self-condensation was scarcely observed, if at all.
IT 14253-45-3
RL: PRP (Properties)
(nuclear magnetic resonance of)
RN 14253-45-3 CAPLUS

CN [1,1'-Biphenyl]-2,3',4,4'-tetrol, 6-methyl-5'-(1-methylethyl)-, 2,3',4,4'-tetraacetate (CA INDEX NAME)



IT 14253-43-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 14253-43-1 CAPLUS
CN [1,1'-Biphenyl]-2,3',4,4'-tetrol, 6-methyl-5'-(1-methylethyl)- (CA INDEX NAME)



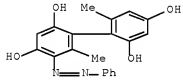
L34 ANSWER 22 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1966:52506 CAPLUS Full-text
DOCUMENT NUMBER: 64:52506
ORIGINAL REFERENCE NO.: 64:9846d-h,9847a-h
TITLE: Orcein dyes. XXV. Mechanism of formation and synthesis of orcein dyes
AUTHOR(S): Musso, Hans; Zahorszky, Uwe Ingomar; Beecken, Hermann; Gottschalk, Ellen Marie; Kraemer, Horst
CORPORATE SOURCE: Univ. Goettingen, Germany
SOURCE: Chemische Berichte (1965), 98(12), 3964-80
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: German
GI For diagram(s), see printed CA Issue.
AB cf. preceding abstract The mechanism of the formation of orcein dyes was elucidated and a reaction scheme presented. Hydroxyhydroquinones react with NH3 via 4-aminoresorcinols to give tetrahydroxydiphenylamines which are readily oxidized by air to indophenols. The indophenols add in alkaline solution resorcinol derivs. and eliminate H2O with the formation of 2-hydroxyphenoxaz-2-one derivs. β- and γ-Hydroxyorceins and hydroxyresorceins substituted on the chromophore and on the ring-substituents by Me groups were prepared according to this scheme. 1,2,4-C6H3(OH)3 (I) (100 mg.) in 20 cc. 1:1 NH4OHH2O heated 0.5 hr. at 50° and evaporated in vacuo, and the residue boiled 3 times with Et2O yielded from the extract 86.2 mg. light-gray, hygroscopic, air-sensitive product which was characterized as [2,4-(AcO)2C6H3]2NH (II). A similar run with 2,3,5-(HO)3C6H2Me yielded 2,4,6-Me(HO)2C6H2NH2 (III), isolated in 50% yield as [2,4,6-Me(AcO)2C6H2]2NH, m. 100°. 2,4-(HO)2.C6H3NH2.HCl (100 mg.) in a little H2O shaken in the absence of O with

about 1 g. Amberlite IR-4B (base) during 0.5 hr. yielded 63% viscous, light brown lacquer which was converted to II, m. 162°. [2,4-(HO)2C6H3]2NH (30 mg.), some AcONa, and 2 cc. Ac2O refluxed 0.5 hr., and the crude product chromatographed on Al2O3 yielded 12.2 mg. N-Ac derivative of II, m. 162°. III.HCl (6.0 g.) in 500 cc. H2O, 30 cc. N NaOH, and 100 cc. BuOH treated dropwise with stirring during 1.5 hrs. under N with 16.0 g. K3Fe(CN)6 in 500 cc. H2O and 20 cc. N NaOH and acidified, and 500 mg. of the residue (1.8 g.) from the BuOH phase chromatographed on silica gel yielded 200 mg. IV (R = Me, R' = OH, R'' = O). 2,3,4,6-Me(HO)3C6HC6H2(OH)2Me-2,4,6 (IVa) (100 mg.) treated under N with 10 cc. 1:1 NH4OH-H2O, purged 1 hr. with N, heated 6 hrs. at 100°, and evaporated, and the residue chromatographed on silica gel yielded 18 mg. β-V (R' = OH, R'' = O) (VI) [acetate, m. 138-40° (decomposition)] and 17 mg. γ-V [acetate, m. 145-7° (decomposition)]. I (200 mg.) and 8.0 g. orcinol in 100 cc. H2O and 30 cc. 2N NH4OH kept 36 hrs. in air, and the product mixture chromatographed twice on cellulose powder yielded 90 mg. dark red VII, decompose at 350° without melting. Crude VII (200 mg.) acetylated and chromatographed gave 70 mg. orange pentaacetate of VII, m. 133-6°. III.HCl (400 mg.) and 8.0 g. m-C6H4(OH)2 in 170 cc. H2O and 10 cc. 2N NH4OH kept 3 days in air gave similarly 98 mg. dark red VIII, decompose at 350° without melting. VIII (30 mg.), some AcONa, and 2 cc. Ac2O heated 0.5 hr. on the water bath and chromatographed on silica gel gave 25 mg. orange pentaacetate of VIII, m. 129-32° (cyclohexane). III (109 mg.) in 5 cc. 1:1 C5H5N-Ac2O kept 24 hrs. at room temperature yielded 138 mg. 2,3,5-AcNH(AcO)2C6H2Me, m. 159° (CHCl3-C6H6), which was also obtained in 55% yield from III.HCl. III (128 mg.), 150 mg. AcONa, and 10 cc. Ac2O refluxed 3 hrs. and chromatographed on silica gel gave 198 mg. 2,3,5-Ac2N(AcO)2C6H2Me, m. 100.5° (C6H6-cyclohexane). 3,5,- 2,4-(HO)2(O2N)2C6HMe (214.1 mg.) in 3 cc. MeOH heated 1.5 hrs. with 1.489 g. SnCl2.2H2O in 3 cc. concentrated HCl and treated with H2S yielded 147.4 mg. 2,4,3,5-(H2N)2(HO)2C6HMe.2HCl (IX.2HCl). IX.2HCl (50 mg.) treated 24 hrs. at 20° with 4 cc. C5H5N-Ac2O gave 28.6 mg. 2,4,3,5-(AcNH)2(AcO)2C6HMe, m. 165-71° (C6H6-cyclohexane). IX.2HCL (100 mg.), 4 cc. Ac2O, and 150 mg. AcONa refluxed 4 hrs. and poured into 30 cc. H2O gave 162 mg. 2,4,3,5-(Ac2N2)(AcO)2C6HMe (IXa), m. 137-8° (C6H6-cyclohexane). PhNH2 (3.726 g.) in 40 cc. 6N HCl diazotized with 3.0 g. NANO2 in 15 cc. H2O, diluted with iced H2O to 150°, and added dropwise during 25 min. to 5.686 g. 3,5-(HO)2C6H3Me.H2O and 30 g. AcONa in 3 l. H2O, and the product chromatographed on silica gel yielded 7.473 g. orange 2,3,5-PhN:N(HO)2C6H2Me (X), m. 195-6° (dioxane-cyclohexane), and 632 mg. red 2,4,3,5-(PhN:N)2(HO)2C6HMe (XI), m. 234-5° (decomposition) (C6H6). X (247 mg.) treated at 60° with 600 mg. SnCl2 in 3 cc. concentrated HCl gave 185 mg. III.HCl which with Ac2O-AcONa yielded 214 mg. 2,3,5-Ac2N(AcO)2C6H2Me, m. 98-9° (C6H6-cyclohexane). XI (333.6 mg.) gave similarly 188.7 mg. IX.2HCl which was converted to 92.5% IXa, m. 137-8°. PhNH2 (93.2 mg.) in 2 cc. 6N HCl diazotized with 70 mg. NaNO2 in 1 cc. H2O, diluted with 40 cc. iced H2O and added dropwise during 20 min. with stirring at 0° to 246.3 mg. [2,4,6-Me(HO)2C6H2]2 (XII), and the crude product (275.3 mg.) chromatographed on silica gel yielded 7 fractions of 34.6, 2.3, 16.8, 1, 81.3, 7.3, and 110.0 mg., resp. Fraction 7 gave the red 5-PhN:N derivative (XIII) of XII, m. 230-1° (decomposition); fraction 5 yielded the red 5,5'-bis(phenyiazo) derivative of XII, charring at 285-90° (C5H5N-AcOEt); and fraction 1 gave the dark red 3,5,5'-tris(phenylazo) derivative of XII, blackens above 200°; fraction 6 gave orange rhombs which were not investigated further. 2-Hydroxy-6-methyl-5-(2-methyl-4,6-dihydroxyphenyl)-p-benzoquinone (XIV) (0.2-0.25 g.) in 50 cc. C6H6 shaken with 1-2 g. Zn dust and 5 cc. AcOH until colorless gave light brown IVa, m. 217-20° (sublimed at 150° in vacuo); 1.66 g. XIV gave in this manner 1.05 g. IVa. XIII (50.7 mg.), 5 cc. MeOH, 5 cc. H2O, and 4 cc. concentrated HCl heated 3 hrs. on the water bath with 80 mg. ZnCl2, and the product refluxed 0.5 hr. with AcONa and 2 cc. Ac2O yielded 40.3 mg. 2,3,4,6-

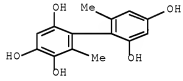
Me(Ac2N)(AcO)2C6HC6H2(OAc)2Me-2,4,6 (XV), m. 133-4° (cyclohexane). IVa (100 mg.) in 10 cc. 1:1 NH4OH-H2O heated 7 hrs. under N on the water bath, and the crude product acetylated gave 113.7 mg. XV. The spectra of 7-hydroxy-2-phenoxazone (XVI), the 4,5-dimethyl derivative of XVI, and 3,5-(HO)2C6H3Me between 300 and 700 mμ are recorded.

IT 4947-10-8P, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl-5-(phenylazo)-
4947-12-0P, 2,2',4,4',5-Biphenylpentol, 6,6'-dimethyl-
4947-13-1P, o-Diacetotoluidide,
3''-(4,6-dihydroxy-o-tolyl)-4'',6''-dihydroxy-, tetraacetate
RL: PREP (Preparation)
(preparation of)

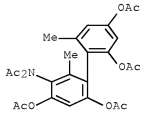
RN 4947-10-8 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-5-(2-phenyldiazenyl)- (CA INDEX NAME)



RN 4947-12-0 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4',5-pentol, 6,6'-dimethyl- (CA INDEX NAME)

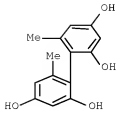


RN 4947-13-1 CAPLUS
CN Acetamide, N-acetyl-N-[2',4,4',6-tetrakis(acetyloxy)-2,6'-dimethyl[1,1'-biphenyl]-3-yl]- (CA INDEX NAME)



L34 ANSWER 23 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1966:52505 CAPLUS Full-text
DOCUMENT NUMBER: 64:52505

ORIGINAL REFERENCE NO.: 64:9845f-h,9846a-d
TITLE: Orcein dyes. XXIV. Mechanism of autoxidation of resorcinol derivatives
AUTHOR(S): Musso, Hans; Gizycki, Ulrich v.; Kraemer, Horst; Doepp, Heinrike
CORPORATE SOURCE: Univ. Goettingen, Germany
SOURCE: Chemische Berichte (1965), 98(12), 3952-63
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: German
GI For diagram(s), see printed CA Issue.
AB cf. CA 64, 8351d. The mechanism by which 1,3,5-MeC6H3(OH)2 (I) is oxidized in alkaline solution by atmospheric O to the dimeric quinones II and III was investigated by isolating intermediates chromatographically, by kinetic measurements, and by preparative studies with sterically hindered model compds. I.H2O (5.1 g.) and 3.6 g. KOH in 85 cc. H2O, treated with stirring under N dropwise during 3.5 hrs. with 29.0 g. K3Fe(CN)6 in 80 cc. H2O and acidified with 2N H2SO4, and the precipitate (2.8 g.) repptd. from EtOH with 2N H2SO4, gave the polymeric IV; the acidified filtrate extracted with BuOH, and the extract chromatographed on paper showed the presence of I, [2,4,6-Me(HO)2C6H2]2 (V), IV, and 4 phenolic compds. IV (500 mg.), 500 mg. Na, and 10 cc. dry C5H5N refluxed 6 hrs. under N, treated successively with 10 cc. 1:1 aqueous C5H5N and 10 cc. H2O, acidified with 50% H2SO4, and extracted with BuOH gave 57 mg. product mixture; the H2O-soluble portion of the mixture (40 mg.) sublimed at 120-80° in vacuo gave 8 mg. mixture of I and V. I. (1.0 g.) and 2.0 g. BzPh in 200 cc. C6H6 under N irradiated with an immersed 125-w. uv lamp during 5 hrs. gave 830 mg. colorless solid and 1.0 g. BzPh; 2.0 g. colorless product chromatographed on cellulose powder, and the main product sublimed at 150-70° in vacuo yielded 40 mg. V, m. 232° (CHCl3). VI (R = Me) (198 mg.) and 2 g. dry C5H5N.HCl heated 2.5 hrs. at 180° under N gave 160 mg. (crude) hygroscopic VI (R = H) (VII), m. 80-1°. Crude VII (46 mg.), 1 cc. Ac2O, and 1 cc. C5H5N kept 3 hrs. at room temperature yielded 34.7 mg. 2,4,6-Me(AcO)2C6H2OC6H3(OAc)Me-3,5 (VIII), m. 81° (cyclohexane). VII (160 mg.), 80 cc. H2O, and 20 cc. 0.2M K2HPO4 treated at 0° with stirring with 540 mg. NO(SO3K)2 in 40 cc. 0.2M K2HPO4, acidified after 1 hr. with 2N H2SO4, and extracted with BuOH, and the residue from the extract (160 mg.) chromatographed on cellulose powder yielded some II and 20 mg. orange-brown IX, m. 137-9° (decomposition) (C6H6). IX (100 mg.), 2 g. Zn dust, and 0.5 g. AcONa in 10 cc. Ac2O refluxed until colorless gave 89 mg. 5-AcO derivative of VIII. The comparative autoxidn. of I and V demonstrated that V was oxidized nearly 10 times as fast as I. If the autoxidn. of I and V is performed in the presence of K3Fe(CN)6, in order to produce free orcinol radicals which are consumed immediately, the presence of V can be demonstrated chromatographically in the mixture, proving that V is not an intermediate in the oxidation of I to II and III. The autoxidn. of V proceeded without the formation of H2O2.
IT 4946-96-7P, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl-
RL: PREP (Preparation)
(preparation of)
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)

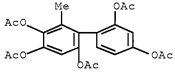


L34 ANSWER 24 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1964:492144 CAPLUS Full-text
DOCUMENT NUMBER: 61:92144
ORIGINAL REFERENCE NO.: 61:16008a-h
TITLE: Formation of hydroxy aryl quinones by the addition of phenols to quinones
AUTHOR(S): Musso, Hans; Gizycki, Ulrich v.; Zahorszky, Uwe I.; Bormann, Dieter
CORPORATE SOURCE: Univ. Marburg, Germany
SOURCE: Justus Liebigs Annalen der Chemie (1964), 676, 10-20
CODEN: JLACBF; ISSN: 0075-4617
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
OTHER SOURCE(S): CASREACT 61:92144
GI For diagram(s), see printed CA Issue.
AB Resorcinol derivs. add in alkaline solution to hydroxyquinones to yield the corresponding dihydroxyarylhydroquinones. PhOH reacts in acidic and alkaline solution with p-benzoquinone (I) to give o-(II) and p-hydroxyphenylbenzoquinone (III); in neutral solution phenoxyquinones are also formed. The condensation of hydroxy-p-xyloquinone (IV) with BF3 led to a dibenzofuranquinone, present in nonpolar solvents as diphenoquinone. m-C6H4(OH)2 (1 g.) in 25 cc. 0.2M phosphate buffer (pH 12) and 4 cc. 2N NaOH treated dropwise with stirring in air with 100 mg. 1,2,4-C6H3(OH)3 in 10 cc. H2O and acidified after 20 min. with dilute H2SO4, and the crude product chromatographed on silica gel yielded 38 mg. V (R = R1 = R2 = R3 = H) (VI), dark brown needles, blacken up to 320° without melting. Similarly were prepared the following V (R, R1, R2, R3, % yield, and m.p. given): Me, H, Me, H, 92.5, 182-7° (decomposition); Me, Me, Me, Me, 90, 224-5°; tert-Bu, H, tert-Bu, H, 39.5, 225-7° (orange needles) (AcOEtcyclohexane); H, H, Me, H, 28, 190-200° (decomposition); Me, H, H, H, 11, 180-200° (decomposition). VI (125 mg.) in 5 cc. Ac2O heated 0.5 hr. on the water bath with NaOAc and Zn dust, and the product chromatographed on silica gel yielded 207 mg. 2,2',4,4',5-pentaacetoxybiphenyl (VII), m. 123-4° (cyclohexane-C6H6). Similarly were prepared the following derivs. of VII (substituent, % yield, and m.p. given): 6'-Me, 68, 136-9°; 6-Me, 84, 133-4°. 6-Hydroxytoluhydroquinone (141 mg.) in 25 cc. 0.2M phosphate buffer (pH 12) stirred 1 hr. in air and acidified with dilute H2SO4, and the product chromatographed on silica gel yielded 91 mg. 4,4'-dihydroxy-2,2'-ditolyldiquinone, yellow needles, m. 207°. Similarly was prepared 4,4'-dihydroxy-3,3',6,6'- tetramethylbiphenyldiquinone, 68%, m. 208-10°. PhOH (5.64 g.) and 1.58 g. KOH in 20 cc. H2O treated with stirring with 0.648 g. I in 20 cc. H2O and acidified after 4 min. with dilute H2SO4, and the product chromatographed on silica gel yielded 5 mg. 5-PhO derivative (VIII) of 2-(p-hydroxyphenoxy)-1,4-benzoquinone (IX), light yellow needles, m. 224-6°, and 43 mg. III, m. 177° (C6H6-cyclohexane). PhOH (5.64 g.) in 35 cc. 20% H2SO4 and 7 cc. MeOH treated 0.5 hr. at 40° with 0.65 g. I yielded 103 mg. II, m. 192-3°, and 10 mg. III. I (3g.) and 18 g. PhOH in 850 cc. H2O and 150 cc.

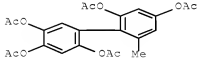
MeOH kept 20 days, and the crude product chromatographed on silica gel yielded 170 mg. yellow 2,5-diphenoxy-1,4-benzoquinone, m. 236-7° (cyclohexane), 95 mg. X, 220 mg. IX, 100 mg. VIII, yellow needles, m. 224-6° (AcOEt-cyclohexane), and 1.5 g. p-C6H4(OH)2. VIII (20 mg.) with 5 cc. Ac2O and 1 cc. C5H5N yielded 17 mg. acetate of VIII, yellow-green needles, m. 192-4° (C6H6). VIII (27 mg.) in 10 cc. Ac2O treated with 2 g. Zn dust yielded 22 mg. 2-(p-acetoxyphenoxy)-5-phenoxyhydroquinone diacetate, m. 102° (C6H6-cyclohexane). I (2 g.) in 200 cc. H2O and 25 cc. MeOH kept 9 days and acidified with dilute H2SO4 yielded 25 mg. IX, yellow needles, m. 145-6° (C6H6-cyclohexane). IX (216 mg.) and 2 g. PhOH in 150 cc. H2O and 25 cc. MeOH kept 13 days yielded 25 mg. VIII, yellow needles, m. 224-6° (AcOEt-cyclohexane). II (100 mg.) in 30 cc. dry Et2O treated 2 hrs. with 0.5 cc. Et2O.BF3 yielded 80 mg. 1,4,5,8-tetramethyl-3,6-dihydroxydibenzofuran-2,7-quinone (XI), black-blue needles, decompose slowly above 300° without melting up to 350° (AcOEt). II (150 mg.) in 15 cc. AcOH treated 4 hrs. at room temperature with 0.5 cc. concentrated H2SO4 gave 102 mg. XI. XI (100 mg.) and a small amount NaOAc in 5 cc. Ac2O heated with the portionwise addition of 3 g. Zn dust until the mixture was colorless gave 116 mg. 1,4,5,8-tetramethyl-2,3,6,7-tetraacetoxydibenzofuran (XII), needles, m. 275-6° (C6H6). 2,7-Dihydroxy-4,5-dimethyldibenzofuran (30 mg.) in 10 cc. Ac2O and 1 cc. C5H5N heated 15 min. on the water bath, and the crude product chromatographed on silica gel yielded 34 mg. diacetate, needles, m. 181-2° (C6H6-cyclohexane). XI (100 mg.) in 100 cc. Me2CO and 5 cc. 2N HCl shaken with Zn dust until colorless gave 30 mg. 2,3,6,7-tetra-OH analog (XIII) of XII, needles, m. 285-300° (decomposition). The ultraviolet spectra of XI and XIII are recorded.

IT 104667-25-6P, 2,2',4,4',5-Biphenylpentol, 6-methyl-, pentaacetate
107893-61-8P, 2,2',4,4',5-Biphenylpentol, 6'-methyl-, pentaacetate
RL: PREP (Preparation)
(preparation of)

RN 104667-25-6 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4',5-pentol, 6-methyl-, 2,2',4,4',5-pentaacetate (CA INDEX NAME)



RN 107893-61-8 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4',5-pentol, 6'-methyl-, 2,2',4,4',5-pentaacetate (CA INDEX NAME)



L34 ANSWER 25 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1963:436058 CAPLUS Full-text
DOCUMENT NUMBER: 59:36058
ORIGINAL REFERENCE NO.: 59:6546h,6547a-h,6548a-e
TITLE: Orcein pigments. XX. The autoxidation products of 2,5-dimethylresorcinol in ammonia and potassium hydroxide
AUTHOR(S): Musso, Hans; Zahorszky, Uwe I.
CORPORATE SOURCE: Univ. Marburg, Germany
SOURCE: Chemische Berichte (1963), 96, 1593-1609
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.

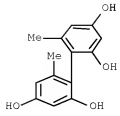
AB The autoxidn. of 2,5,1,3-Me2(HO)2C6H2 (I) in NH4OH yielded dyes analogous to those obtained from 3,5-(HO)2C6H3Me (II). The autoxidn. in aqueous KOH yielded, in addition to the dimeric mono- and diquinone, a trimeric diquinone which could not be identified with certainty in the product from II. The autoxidn. of I proceeds faster and furnishes better yields of the higher oxidized products which are more stable than those from II. I (14 g.) in 140 cc. concentrated NH4OH kept 25 days at room temperature in air while being treated daily with dry NH3 during a few min., concentrated in vacuo over concentrated H2SO4, and dried over P2O5 yielded 16.8 g. crude, violet-black, amorphous powdery xylorcein which, extracted at about 70° with the upper phase of 5:1:2.6:5 C6H6-BuOH-AcOH-H2O and then chromatographed on cellulose powder, yielded 0.46 g. III (R = OH) (IV), red-brown crystals, m. 340° (decomposition) (MeOH-CHCl3), 0.85 g. (crude) trans-V (R = OH) (VI) (the OH groups on the benzene rings are in the trans configuration with respect to the phenoxazone plane), red-brown crystals, m. 280° (MeOH-CHCl3), 0.94 g. (crude) cis-V (R = OH) (VIA), red-brown crystals, m. 280° (decomposition), 0.35 g. (crude) III (R = NH2) (VII), red rodlets, m. 370° (decomposition) (MeOH-CHCl3), 0.90 g. (crude) trans-VIII (R = O) (IX) rodlets with a green-black luster, m. 300° (decomposition), 1.30 g. (crude) cis-VIII (R = O), (IXA), green-black glistening rodlets, m. 350° (decomposition), 0.26 g. trans-X (XI), green-black glistening crystals, m. 350° (decomposition) (MeOH-CHCl3), 0.38 g. (crude) cis-X, green-black needles, m. 350° (decomposition) (MeOH-CHCl3), 0.35 g. (crude) cis-VIII (R = NH) (XII), and 0.25 g. (crude) trans-VIII (R = NH) (XIIA). IV (50 mg.) in 5 cc. dry C5H5N treated at room temperature with 5 cc. Ac2O, evaporated after 24 hrs., and the residue chromatographed on silica gel yielded 26 mg. red triacetate B of IV, m. 222-5° (decomposition) (C6H6-cyclohexane), and 7 mg. triacetate A of IV, yellow needles, m. 234-7° (decomposition). VI (100 mg.) gave similarly 15.9 mg. orange triacetate of VI, m. 240° (decomposition) (C6H6-cyclohexane). VI (52 mg.) in 20 cc. EtOH warmed 5 hrs. on the water bath with 250 mg. o-C6H4(NH2)2 (XIII) in 10 cc. AcOH and evaporated, and the residue evaporated with C5H5N and chromatographed on silica gel yielded 20 mg. phenazine derivative of VI, orange crystals, m. 231-3° (decomposition) (C6H6-cyclohexane). VIA (43 mg.) treated 24 hrs. with Ac2O-C5H5N at room temperature and evaporated, and the residue chromatographed on CaSO4 yielded 21 mg. triacetate of VIA, orange-yellow crystals, m. 239-42° (decomposition). VIA (77 mg.) and XIII yielded 16.5 mg. yellow phenazine derivative, m. 213-17° (decomposition) (C6H6-cyclohexane). VII (120 mg.), Ac2O, and NaOAc refluxed 20 min., and the crude product chromatographed successively on silica gel and CaSO4 yielded 10.5 mg. red triacetate of VII, m. 160-3° (decomposition). IX (139 mg.) acetylated and chromatographed on silica gel gave 34 mg. N-Ac tetraacetate derivative of IX, red rodlets, m. 165-70° (decomposition). IXA (96 mg.) acetylated with Ac2O-NaOAc and chromatographed on CaSO4 yielded 21 mg. N-Ac tetraacetate derivative of IXA, orange-red crystals, m. 172-5° (decomposition). XI (30 mg.) with C5H5N-Ac2O yielded during 3 days at room temperature 13 mg. N-Ac triacetate derivative of

XI, orange crystals, m. 164-7° (decomposition) (C6H6-cyclohexane), cis-X (55 mg.) yielded similarly 13.9 mg. N-Ac triacetate derivative of cis-X, red-orange crystals, m. 172-5° (decomposition) (C6H6-cyclohexane). Crude XII (160 mg.) or 120 mg. XIIA were repptd. from a few cc. MeOH with C6H6 and filtered, and the blue amorphous residues, which did not melt up to 340° but decomposed with effervescence when inserted at 240°, were isolated as XII.1/2H2SO4 and XIIA.1/2H2SO4.MeOH, resp. Pure VI or VIA (1 mg.), each in 1 cc. glycerol heated in vacuo in a sealed tube at 185° and partitioned after 1 hr. between BuOH-H2O, and the residues from the red BuOH phases chromatographed on cellulose powder showed that both dyes were isomerized to about 50%. IX and IXA heated to 200° during 1 hr. turned red-brown; in glycerol during 1.5 hrs. at 200° only brown-black decomposition products were formed. I (10 g.) and 8.6 g. KOH in 200 cc. H2O kept 5 days at room temperature in the air, acidified with dilute H2SO4, and extracted with BuOH yielded 8.6 g. dark brown mass which dissolved in 100 cc. upper phase of BuOH-0.2M phosphate buffer (pH 7) and chromatographed on cellulose powder yielded 2.2 g. 6-hydroxy-2,5-dimethyl-3-(4,6-dihydroxy-2,5-dimethylphenyl)-1,4- benzoquinone (XIV), red rodlets, m. 223-4° (MeOH CHCl3), 60 mg. 2,5-dimethyl-4,6-bis(4-hydroxy-3,6-dioxo-2,5-dimethyl-1,4- cyclohexadienyl)resorcinol (XV), orange rodlets, m. 282-3° (MeOH), pK 6.80, and 752 mg. 4,4'-dihydroxy-3,6,3'6'-tetramethylbiphenyl-2,5,2',5'- diquinone (XVI), orange-yellow rhombs, m. 208-10° (MeOH and sublimed in vacuo at 170°). XIV (195 mg.) in 5 cc. C5H5N and 5 cc. Ac2O evaporated after 0.5 hr. and chromatographed on silica gel yielded 197 mg. triacetate of XIV, yellow crystals, m. 156-7° (C6H6-cyclohexane). XIV (245 mg.), 5 cc. Ac2O, and a little NaOAc refluxed 5 min. while being treated with Zn dust in small portions and evaporated yielded 380 mg. 3,4,6,4',6'-pentaacetoxy-2,5,2',5'- tetramethylbiphenyl, m. 182-3° (C6H6-cyclohexane). XIV (175 mg.) and 200 mg. XIII in 4 cc. AcOH heated 0.5 hr. on the water bath and evaporated, and the residue chromatographed on silica gel yielded 150 mg. phenazine derivative (XVII), yellow-green crystals, m. 259-60° (EtOH-C6H6). XVII (120 mg.) acetylated with 5 cc. C5H5N and 5 cc. Ac2O, and the product chromatographed on silica gel yielded 118 mg. triacetate of XVII, yellow-brown crystals, m. 200-2° (EtOH). XV (14.4 mg.) in 5 cc. Ac2O refluxed 5 min. with a small amount NaOAc while being treated with Zn dust in small portions, and the product chromatographed on silica gel gave 13.2 mg. 3,5-diacetoxy-2,6-bis(3,4,6-triacetoxy-2,5- dimethylphenyl)-p-xylene, m. 204-5° (C6H6-cyclohexane). XVI (113 mg.) yielded similarly 109 mg. yellow diacetate of XVI, m. 142-3° (C6H6-cyclohexane). XVI (86 mg.) acetylated reductively yielded 126 mg. [2,5,3,4,6-Me2(AcO)3C6]2, m. 188-90° (C6H6-cyclohexane). XVI (47 mg.) and 150 mg. XIII in 5 cc. AcOH heated 0.5 hr. on the water bath, and the product chromatographed on silica gel yielded 20 mg. phenazine derivative (XVIII), black-blue needles, m. 229-31° (EtOH). XVIII (200 mg.) in 3 cc. C5H5N treated with 5 cc. Ac2O and evaporated immediately in vacuo and the residue chromatographed on silica gel yielded 94 mg. 3,3'-diacetoxy-1,4,1',4'-tetramethyl-2,2'-biphenazine, pale yellow, m. 299-300° (C6H6-cyclohexane). The infrared absorption maximum of the various compds. described and the ultraviolet absorption maximum of the various quinone are tabulated.

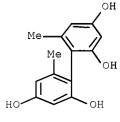
IT 4946-96-7, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl-
(spectrum of)

RN 4946-96-7 CAPLUS

CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)

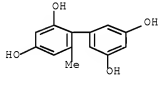


L34 ANSWER 26 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1963:436057 CAPLUS Full-text
DOCUMENT NUMBER: 59:36057
ORIGINAL REFERENCE NO.: 59:6546e-h
TITLE: Orcein pigments. XIX. The effect of ortho-methyl groups on the electronic spectra and pK values of orcein dyes and hydroxybiphenyl derivatives
AUTHOR(S): Musso, Hans; Zahorszky, Uwe I.
CORPORATE SOURCE: Univ. Marburg, Germany
SOURCE: Chemische Berichte (1963), 96, 1588-92
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB The striking difference in the absorption spectra and pK values between resorcinol blue and orcein dyes is explained by steric resonance hindrance and H bonds and confirmed on colorless tetrahydroxybiphenyl derivs. The pK values are given for the following compds.: I (R = OH, R' = H)6.40; I (R = OH, R' = Me) 6.76; II (R = OH, R' = H) 5.31; II (R = OH, R' = Me) 4.64; III (R = OH, R' = H, R'' = Me) 7.15; III (R = OH, R' = Me, R'' = H) 7.35; IV (R = OH) 7.46. The ultraviolet absorption spectra of [2,4(HO)2C6H3]2, [4,2,6-Me(HO)2C6H2]2, 2,4-(HO)2C6H3Me, 1,4,3,5Me2(HO)2C6H2, 1,2,3,5-Me2(HO)2C6H2, and [2,4,6-Me(HO)2C6H2]2 are recorded.
IT 4946-96-7, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl- (spectrum of)
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



L34 ANSWER 27 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1961:71148 CAPLUS Full-text
DOCUMENT NUMBER: 55:71148
ORIGINAL REFERENCE NO.: 55:13536c-f
TITLE: Biosynthesis of fungal metabolites. II. The biosynthesis of alternariol and its relation to other

fungal phenols
AUTHOR(S): Thomas, R.
CORPORATE SOURCE: Univ. London
SOURCE: Biochemical Journal (1961), 78, 748-58
CODEN: BIJOAK; ISSN: 0264-6021
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. CA 54, 22821g. The biosynthesis of alternariol (I), C14H10O5, from Alternaria tenuis has been studied. Chemical degradation of labeled I derived from AcONa-1-C14 (CA 48, 799i) demonstrated a biosynthetic mechanism involving head-to-tail condensation of Aco units. I was methylated to the tri-Me ether with Me2SO4 and K3CO2 in anhydr. acetone by refluxing the mixture Kuhn-Roth oxidation of the trimethyl ether derivative yielded AcO- quant. Hydrolysis of I tri-Me ether by refluxing with N NaOH followed by the addition of Me2SO4 and boiling for 1 min. yielded the Me ester of 2,3',4,5'-tetramethoxy-6-methylbiphenyl-2'-carboxylic acid, m. 124°. Demethylation yielded 2,3', 4', 5'-tetrahydroxy-6-methylbiphenyl, (II), m. 246-8°. Nitration of II after treatment at 100° in concentrated H2SO4 for 30 min. was accomplished in an ice bath with concentrated HNO3 subsequently raised to 70° to yield 2,3',4,5'-tetrahydroxy-6-methyl-3,4', 5,6'-tetranitrobiphenyl-2'-sulfonic acid, (III), m. 246°. III was degraded with hypobromite in saturated Ba(OH)2. The tri-Me ether of I was oxidized with KMnO4 in N NaOH to yield 3,5-dimethoxyphthalic acid, m. 153-6°, and 4,6-dimethoxyphthalonic acid, m. 173° (decompose). The dehydration of 3,5-dimethoxyphthalic acid yielded the anhydride, m. 148-9°. Reductive decarboxylation of 4,6-dimethoxyphthalonic acid with red P and HI yielded CO2 and 3,5-dihydroxyphenylacetic acid, m. 130°, which was decarboxylated by heating the solid in a stream of N gas at 270° to yield orcinol, m. 107-8°, which sublimed. Orsellinic-carboxy-C14 acid was prepared from orsellin aldehyde-formyl-C14 (Adams and Levine, CA 17, 3867; Hoesch, CA 7, 2396). The possibility that orsellinic acid is a common precursor with other fungal phenols containing C14 skeletons is discussed.
IT 100397-25-9, 2,3',4,5'-Biphenyltetrol, 6-methyl-
(as alternariol degradation product)
RN 100397-25-9 CAPLUS
CN [1,1'-Biphenyl]-2,3',4,5'-tetrol, 6-methyl- (CA INDEX NAME)



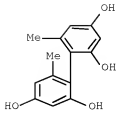
L34 ANSWER 28 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1961:64900 CAPLUS Full-text
DOCUMENT NUMBER: 55:64900
ORIGINAL REFERENCE NO.: 55:12349f-i,12350a-e
TITLE: Hydrogen bonds. IV. Acidity and hydrogen bonds in hydroxybiphenylenes and hydroxybiphenyl quinones
AUTHOR(S): Musso, Hans; Matthies, Hans-Georg
CORPORATE SOURCE: Univ. Gottingen, Germany
SOURCE: Chemische Berichte (1961), 94, 356-68
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB cf. CA 54, 15322c. o,o'-Dihydroxybiphenyls showed an extraordinarily high acidity in the 1st dissociation step and a large difference in the 2nd step if a stable H bridge could form in the monoanion. If the H bridge was hindered by substituents in the 6,6'-position, the OH groups dissociated practically independently from each other. The dissociation of hydroxybiphenylquinones was investigated spectroscopically and by potentiometric titration. (o-HOC6H4)2 (18.6 g.) in 100 cc. Me2CO and 7.9 g. K2CO3 treated at reflux with stirring with 5.05 g. Me2SO4 in 20 cc. Me2CO during 40 min., the mixture refluxed 1 hr., evaporated, the residue diluted with 100 cc. H2O, acidified, extracted with Et2O, the extract washed with N Na2CO3 and N NaOH, and evaporated yielded 7.62 g. o-MeOC6H4C6H4OH-o (I), m. 73-4° (50% AcOH). I (0.83 g.) in 10 cc. C5H5N-Ac2O kept 3 hrs. at room temperature gave 100% viscous oily acetate of I, b0.05 85-90°, n20D 1.5778. Phoenicin (II) (268 mg.) in 50 cc. dry CHCl3 refluxed 7 min. with 250 mg. Ag2O and 5 cc. MeI, treated again with the same amts. of Ag2O and MeI, concentrated to half-volume after 12 min., filtered, washed with CHCl3, evaporated in vacuo, and the residue chromatographed on cellulose powder yielded 70 mg. unchanged II, 101 mg. mono-Me ether (III) of II.MeOH, m. 70° resolidified and rem. 139-44° (decomposition) [the melt solidified to long needles of III, m. 230-2° (decomposition)], and 79 mg. di-Me ether of III, m. 130-1° (C6H6-cyclohexane and sublimed at 110° in vacuo), followed by 61 mg. red-brown lacquer. III (30.1 mg.) heated on the microscope stage 2 hrs. at 140-5° and sublimed in vacuo gave 19.4 mg. 2,7-dimethyldibenzofuran[1,4;5,8]diquinone (anhydrophoenicin). The pK values in 50% MeOH and in H2O were determined titrimetrically and spectroscopically in both cases: PhOH, 10.78, 10.74, 9.98, 9.99; m-MeC6H4OH, -, -, -, 10.11; 2-C10H7OH, 10.56, 10.64, 9.97, -; 3,5-(HO)2C6H3Me, 10.50, 10.66, 9.38, 9.48 (pK1) [11.96, -, 11.20, - (pK2)]; o-HOC6H4Ph, 11.22, 11.24, -, 10.01; I, 11.32, 11.42, -, 10.40; (o-HOC6H4)2, 8.00, 7.94, 7.56, 7.46 (pK1) [12.20, above 13.00, 11.80, above 13.00 (pK2)]; 3,2-(o-HOC6H4)C10H6OH, 7.94, 8.00, -, 7.55 (pK1) [11.98, above 13.00, -, above 13.00 (pK2)]; (m-HO-C6H4)2, 10.26, -, -, - (pK1) [10.90, 11.02, -, 9.86 (pK1.2)] 11.44, -, -, -(pK2); (p-HOC6H4)2, 10.40, -, -, - (pK1) [11.10, -, -, 9.62 (pK1.2); 11.70, -, -, - (pK2)]; [2,4-Me(HO)C6H3]2, 10.70, -, -, - (pK1) [11.24, -, -, 10.11 (pK1.2); 11.70, -, -, - (pK2)]; [6,2-Me(HO)C6H3]2, 11.22, -, -, -, (pK1) [11.80, 11.72, -, 10.45 (pK1.2); 12.14, -, -, -, (pK2)]; (2-HOC10H6)2, 10.64, -, -, - (pK1) [11.10, - , -, - (pK1.2); 11.68, -, -, - (pK2)]; [2,4-(HO)2C6H3]2 (IV), 7.88, -, 7.44, - (pK1) [10.75, -, 10.10, - (pK2)]; [4,2,6-Me(HO)2C6H2]2 (V), 9.04, -, 8.54, - (pK1) [9.36, -, 8.80, 8.94 (pK1.2); 9.72, -, 9.30, - (pK2); 12.03, -, 11.32, - (pK3); 12.16, -, 11.70, - (pK3.4)]; [6,2,4-Me(HO)2C6H2]2 (VI), 10.20, -, 9.34, - (pK1) [10.68, -, 9.90, 9.86 (pK1.2); 11.15, -, 10.45, - (pK2); 11.92, -, 11.45, - (pK3); 12.16, -, 11.65, - (pK3.4)]; 4,5-dihydroxy-2,7-dimethyldibenzofuran, 8.15, 7.90, -, - (pK1) [11.84, above 13.00, -, - (pK2)]; 2,7-dihydroxy-4,5-dimethyldibenzofuran, 9.90, -, -, - (pK1) [10.58, -, -, - (pK1.2); 11.07, -, -, - (pK2)]; 1,8-C10H6(OH)2, 7.46, 7.42, -, 6.71 (pK1) [12.16, above 13.00, -, above 13.00 (pK2)]; o-HOC6H4CO2H, 3.74, -, 3.00 (pK1) [12.11, -, 11.70, - (pK2)]; 6-hydroxytoluquinone (VII) about 4.60, about 4.60, -, about 4.04; 3-[2,4,6-Me(HO)2C6H2] derivative (VIII) of VII, 5.38, 5.26, -, 4.37 (pK1) [10.40, 10.52, -, 9.49 (pK2)]; 6,6'-dihydroxy-3,3'-ditoludiquinone, 4.33, -, 3.93 (pK1) [4.88, 4.80, 4.28, 4.10 (pK1.2); 5.45, -, 4.79, - (pK2)]; II, 3.95, 3.85, 3.45, 3.02 (pK1) [7.30, 7.18, 6.00, 5.95 (pK2)]; III, 4.02, 4.07, -, 3.04. The infrared absorption spectrum of I, the titration curves of IV, V, and VI in 50% MeOH with 0.1N KOH in 50% MeOH, and the absorption spectra of VIII in 50% MeOH in dependence on the pH were recorded.

IT 4946-96-7, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl- (acidity of)

RN 4946-96-7 CAPLUS

CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



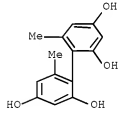
L34 ANSWER 29 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1958:104063 CAPLUS Full-text
DOCUMENT NUMBER: 52:104063
ORIGINAL REFERENCE NO.: 52:18306b-i,18307a-b
TITLE: Orcein dyes. VII. Synthesis, constitution, and light absorption of Henrich's quinone
AUTHOR(S): Musso, Hans
CORPORATE SOURCE: Univ. Gottingen, Germany
SOURCE: Chemische Berichte (1958), 91, 349-63
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB cf. C.A. 52, 10091b; Henrich, C.A. 33, 1657. Henrich's formula suggesting that the quinone obtained by autoxidation of orcinol in aqueous KOH is 3,6,6'-trihydroxy-2,2'-dimethyldiphenoquinone is improbable due to steric hindrance. The monoquinone 6-hydroxy-3-(4,6-dihydroxy-2-tolyl)toluquinone (I) has been prepared by synthesis. Successive methylation of 2-nitro-3,5-dihydroxytoluene with 3 equivs. Me2SO4 in 10% aqueous NaOH gives 2-nitro-3,5-dimethoxytoluene, m. 106°. A solution containing 1.28 g. product in 20 cc. MeOH is diluted with 45 cc. hot dilute H2SO4 and treated with Zn dust until colorless when boiled. MeOH is evaporated, dilute NaOH added, and the mixture extracted with Et2O to give 2-amino-3,5-dimethoxytoluene (II), b0.04 70°, which discolors in air. A solution of 37 mg. II in 1 cc. pyridine and 1 cc. Ac2O is left 24 hrs. and then evaporated in vacuo at 20° to yield 30.2 mg. 2-acetamido-3,5-dimethoxytoluene, m. 152°. Diazotization of 0.5 g. II in 5 cc. dilute H2SO4 by dropwise addition of 0.21 g. NaNO2 in 1 cc. H2O at 0° gives the diazonium salt solution (III); after 15 min. 0.55 g. KI in 1 cc. H2O is then added, the mixture warmed 2 hrs. at 80° until N evolution is complete, and extracted with C6H6. Impurities are removed from the washed, dried solution by adsorption on Al2O3; evaporation yields 72% 2-iodo-3,5-dimethoxytoluene (IV), m. 84-6°. Monoiodoorcinol on methylation with Me2SO4 in aqueous NaOH at 100° and on extraction with Et2O and distillation gives orcinol di-Me ether, b1 80°, and a mixture, b1 160°, separated at 10-3 mm. into IV, b. 70-80°, as well as diiodo-3,5-dimethoxytoluene (V), subliming and m. 202-3°. Direct iodination of 3.08 g. 2,4-dimethoxytoluene with 5.30 g. iodine and 4.70 g. PbO, started by adding 0.05 g. HgO and refluxing 48 hrs., is followed by chromatography of the C6H6 solution on Al2O3 to remove impurities and gives 2.4% V, 38% IV, and a mixture containing mono- and diiodo isomers. Deiodination of 2.52 g. IV with 7 g. electrolytic Cu in the absence of air at 100° and then for 5 hrs. at 200° is followed by extraction with C6H6 and chromatography giving 90% 4,4',6,6'-tetramethoxy-2,2'-bitolyl, m. 103-4°. This product (1.87 g.) is warmed with pyridinium chloride to 150°, then at 180° for 1 hr., and finally at 200° for 0.25 hr. Extraction by Et2O, alkaline extraction of the solution under N, acidification, and extraction by Et2O gives 4,4',6,6'-tetrahydroxy-2,2'-bitolyl (VI), m. 237-9°, yellowing in aqueous solution and turning brown in

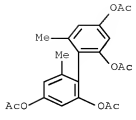
alkali. Treatment of the tetra-Me ether with HI gives 43% VI and 45% 2,7-dihydroxy-4,5-dimethyldibenzofuran, m. 247-8°. VI with Ac2O gives the tetraacetate, m. 136-7°. Oxidation of a solution of 0.5 g. VI and 1 g. K2HPO4 in 15 cc. H2O by dropwise addition of 2 moles K nitrosodisulfonate at 0°, acidification, crystallization from the filtrate, and recrystn. from AcOH, H2O-EtOH, or CHCl3EtOH gives I, m. 131-2° (decomposition), purified by distribution chromatography. On treatment with Zn dust and Ac2O, I gives 3.4,4',6,6'-pentaacetoxy-2,2-bitolyl (VII), m. 154°, also obtained by hydrogenation of the solution in Ac2O with 1.1 moles H over Pd-BaSO4, when some leucohexaacetate, m. 194-201°, is also formed. Oxidation of 0.5 g. VI with 4 moles K nitrosodisulfonate at 0° yields 4,4'-dihydroxy-2,2'-bitolyldiquinone (VIII), m. 207° (discoloring from 180°), which on treatment with Zn and Ac2O gives 3,3',4,4',6,6'-hexaacetoxy-2,2'-bitolyl (IX), m. 199-201°. Genuine Henrich's quinone is prepared, m. 155-9° (decomposition), together with some diquinone, m. 175-80° (decomposition). Reductive acetylation gives VII and IX and distribution chromatography of Henrich's quinone with BuOH-0.2M phosphate buffer at pH 7.10 on 3 cellulose columns gives I and VIII, identified by m.p. Treatment of I with o-phenylenediamine gives 3-hydroxy-1-methyl-2-(4,6-dihydroxy-2- tolyl)phenazine, m. 298-300° (acetate, m. 160° and 168°), and treatment of VIII with o-phenylenediamine gives 3,3'-dihydroxy-1,1'-dimethyl-2,2'-biphenazine, m. 220-30°(diacetate, m. 221°). Oxidation of orcinol hydrate with K nitrosodisulfonate gives 6-hydroxytoluquinone, m. 117-27°, yielding 3-hydroxy-1-methylphenazine, decompose 290° (acetate, m. 149°). Resolution of a solution of I buffered to pH 9.0 by fractional chromatography on a column of starch grains of 0.05-0.075 mm. for 3 days gives [α]D20 153-4° or -153-4° for the isomer.

IT 4946-96-7P, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl-
114399-85-8P, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl-, tetraacetate 124116-64-9P, 2,2',4,4',5-Biphenylpentol, 6,6'-dimethyl-, pentaacetate 124202-23-9P, 2,2',4,4',5,5'-Biphenylhexol, 6,6'-dimethyl-, hexaacetate
RL: PREP (Preparation)
(preparation of)

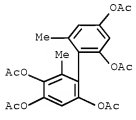
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



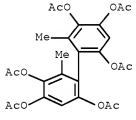
RN 114399-85-8 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl-, 2,2',4,4'-tetraacetate (CA INDEX NAME)



RN 124116-64-9 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4',5-pentol, 6,6'-dimethyl-, 2,2',4,4',5-pentaacetate (CA INDEX NAME)



RN 124202-23-9 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4',5,5'-hexol, 6,6'-dimethyl-, 2,2',4,4',5,5'-hexaacetate (CA INDEX NAME)



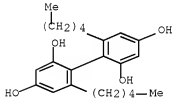
L34 ANSWER 30 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1959:105499 CAPLUS Full-text
DOCUMENT NUMBER: 53:105499
ORIGINAL REFERENCE NO.: 53:18935b-g
TITLE: Chemistry of lichens. XI. Structure of picrolichenic acid
AUTHOR(S): Wachtmeister, Carl A.
CORPORATE SOURCE: Kgl. Tekn. Hogskolan, Stockholm
SOURCE: Acta Chemica Scandinavica (1958), 12, 147-64
CODEN: ACHSE7; ISSN: 0904-213X
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.

AB cf. C.A. 52, 12836f. Picrolichenic acid (I), prisms, m. 187-90° (decomposition) (aqueous AcOH), an intensely bitter compound isolated (5-7% yield) from the dry powdered crustose lichen Pertusaria amara, occurring on the bark of oak and beech trees, by Et2O extraction and crystallization in the cold, has been shown to have the structure (I) by decarboxylation of its piperidide [2 interconvertible forms, m. 169-72° (C6H6) and 187-9° (decomposition) (aqueous AcOH) (di-Me derivative, prisms, m. 163-5° (MeOH)] to 2,4,6-C5H11(HO)(MeO)C6H2C6H(C5H11)(CO2H)(OH)2-2,3,4,6 (II), m. 145-8° (decomposition) (C6H6). I was purified by Al2O3 treatment and recrystn. from C6H6 or aqueous AcOH; it is soluble in most common organic solvents except C6H6 and petr. ether. Brief (1 min.) treatment of I with CH2N2 in the cold gave Me picrolichenate, needles, m. 102-3.5° (MeOH), while prolonged (overnight) methylation with CH2N2gave Me O-methylpicrolichenate, needles, m. 80-2° (C6H14). Simultaneous decarboxylation and demethylation of II gives 2,2'-diamyl-4,4',6,6'-tetrahydroxybiphenyl (III), needles, m. 180-1° (glacial AcOH) (tetra-Me ether, m. 34.5-5.5° (MeOH); dibromo derivative, m. 119.5-20.5° (glacial AcOH); tribromo derivative, m. 106-7° (glacial AcOH); tetrabromo derivative, m. 97-8° (glacial AcOH)). III was identified by dehydration with ZnCl2 at 240-50° to 3,7-dihydroxy-1,9-diamyldibenzofuran (IV), m. 124-5° (C6H6-petr. ether), which was methylated [di-Me ether of IV, needles, m. 72-3° (aqueous AcOH)] and oxidized by 20% KMnO4 solution to 3,7-dimethoxydibenzofuran-1,9-dicarboxylic acid [di-Me ether, needles, m. 191-3.5° (EtOH)]. Infrared and ultraviolet absorption spectra further support the structures given. The unique structure of I combines features of the depsidones and of usnic acid and is comparable to the fungal metabolite griseofulvin which contains a similar spiran structure. The theory of oxidative coupling of phenols provides a common basis for a rational interpretation of the biosynthesis of dibenzofuran-like compds. from simple phenolic progenitors.

IT 98985-63-8P, 2,2',4,4'-Biphenyltetrol, 6,6'-dipentyl-
102756-23-0P, 2,4,4'-Biphenyltriol, 2'-methoxy-6,6'-dipentyl-
102898-20-4P, β-Resorcylic acid,
5-(4-hydroxy-2-methoxy-6-pentylphenyl)-6-pentyl-
RL: PREP (Preparation)
(preparation of)

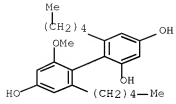
RN 98985-63-8 CAPLUS

CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dipentyl- (CA INDEX NAME)

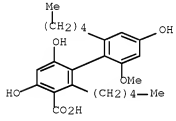


RN 102756-23-0 CAPLUS

CN [1,1'-Biphenyl]-2,4,4'-triol, 2'-methoxy-6,6'-dipentyl- (CA INDEX NAME)

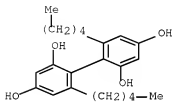


RN 102898-20-4 CAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid,
4,4',6-trihydroxy-2'-methoxy-2,6'-dipentyl- (CA INDEX NAME)

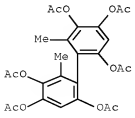


L34 ANSWER 31 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1958:6282 CAPLUS Full-text
DOCUMENT NUMBER: 52:6282
ORIGINAL REFERENCE NO.: 52:1114h-i,1115a-b
TITLE: Picrolichenic acid, a new type of lichen acid
AUTHOR(S): Erdtman, H.; Wachtmeister, C. A.
CORPORATE SOURCE: Roy. Inst. Technol., Stockholm
SOURCE: Chemistry & Industry (London, United Kingdom) (1957) 1042
CODEN: CHINAG; ISSN: 0009-3068
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB A structure for picrolichenic acid (I), C25H30O7, is proposed (cf. Zopf, Ann. 321, 32(1902)). I is optically inactive and contains OH, OMe, CO, CO2H, lactone, and two C-Me groups. With CH2N2 it gives a mono-Me ester, m. 102-3.5°, and a neutral O,O-di-Me derivative, m. 80-2°. I with KMnO4 gives caproic acid. In NaOH acidified in the cold it gives a gum which loses CO2 to form a monocarboxylic acid, C24H32O6 (II), m. 145-8° (decomposition). II on boiling with HBr undergoes decarboxylation and demethylation to diolevitol (III), m. 180-1°. Dehydration of III with ZnCl2 gives a highly fluorescent phenol, C22H28O3; the di-Me ether, m. 71.5-3°, of the latter is oxidized with permanganate to a dicarboxylic acid, the di-Me ester of which, m. 191-3.5°, is identical with 3,7-dimethoxy-1,9-dicarbomethoxydibenzofuran (cf. Shibata, C.A. 45, 7100d). I is the first example of a lichen acid formed by intramol. C-C coupling (cf. Festschr. Arthur Stoll, Basel, 1957, p. 144; Barton and Cohen, ibid., p. 117).
IT 98985-63-8P, 2,2',4,4'-Biphenyltetrol, 6,6'-dipentyl-
RL: PREP (Preparation)

(preparation of)
RN 98985-63-8 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dipentyl- (CA INDEX NAME)



L34 ANSWER 32 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1957:43283 CAPLUS Full-text
DOCUMENT NUMBER: 51:43283
ORIGINAL REFERENCE NO.: 51:8062c-e
TITLE: Formazyl complexes of the thiophene series
AUTHOR(S): Seyhan, Muvaffak; Fernelius, W. Conrad
CORPORATE SOURCE: Pennsylvania State Univ., University Park
SOURCE: Chemische Berichte (1956), 89, 2482-3
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Diazotizing 625 mg. o-H2NC6H4CO2H in 2 cc. concentrated HCl with 375 mg. NaNO2 in the min. amount of H2O at -5°, adding 1 g. 2-thiophenealdehyde phenylhydrazone and 1 g. NaOH in 35 cc. MeOH at 0°, filtering off the precipitate after 4 hrs., acidifying the filtrate with AcOH, and adding H2O give 805 mg. N-phenyl-N'-(2-carboxyphenyl)-C-(2-thienyl)formazan (I), dark red crystals, m. 181-2° (decomposition). Heating 140 mg. I in concentrated aqueous solution with 90 mg. NiSO4 and NaOAc a short time on a water bath gives a Ni complex, C18H12O2N4SNi, dark green microcrystals, not m. below 320°; Cu complex, C18H12O2N4SCu, deep violet microcrystals, m. 243-4° (decomposition).
IT 124202-23-9
(Derived from data in the 6th Collective Formula Index (1957-1961))
RN 124202-23-9 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4',5,5'-hexol, 6,6'-dimethyl-, 2,2',4,4',5,5'-hexaacetate (CA INDEX NAME)



L34 ANSWER 33 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1957:43284 CAPLUS Full-text

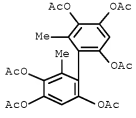
DOCUMENT NUMBER: 51:43284
ORIGINAL REFERENCE NO.: 51:8062e-i,8063a-f
TITLE: Rearrangements of hydroxydiquinones. I. Preparation of 2-hydroxy-4,4'-dimethyl-3,3',6,6'-diquinone and of 2,3,3',6,6'-pentahydroxy-4,4'-diphenyl
AUTHOR(S): Posternak, Th.; Alcalay, W.; Huguenin, R.
CORPORATE SOURCE: Univ. Lausanne, Switz.
SOURCE: Helvetica Chimica Acta (1956), 39, 1556-63
CODEN: HCACAV; ISSN: 0018-019X
DOCUMENT TYPE: Journal
LANGUAGE: French
GI For diagram(s), see printed CA Issue.
AB cf. C.A. 38, 12186. [The nomenclature and numbering of the biquinones OC.CH:CR.CO.CR'':CC:CR'.CO.CR:CH.CO (A) and the (dihydroxy- or alkoxyphenyl)-p-benzoquinones OC.CH:CR.CO.CR'':CC:CH.C(OR'):CR.CH:COR' (B) or their tautomeric forms OC.CH:CR.C(OR'):CR''.C:C.CH:C(OR').CR:CH.CO(B') in the original of this paper differ from C.A. usage. In this abstract the compds. are designated by A, B, or B', followed in parentheses by R, R', and R'' in that order.] A mixture of 23 g. powdered A (Me, H, H) (I) and 92 g. p-C6H4(OH)2 added to 2.3 l. boiling water, boiled 1-2 min. and the air-dried product washed with boiling water yielded 20 g. B (or B') (Me, H, H) (II), m. 256-8° (corrected). AlCl3 (2.5 g.) added to 500 mg. toluquinone in 6 cc. CS2, the mixture shaken 30 min. at room temperature, and the air-dried product added portionwise to 50 cc. 2N HCl at 0° yielded 230 mg. II, m. 256-8°. II in EtOH oxidized with FeCl3 yielded I. Powdered anhydrous AlCl3 (15 g.) added to 3 g. phenyl-p-benzoquinone in 60 cc. CS2, the mixture shaken 5 hrs., the air-dried product decomposed with 10% HCl at 0°, washed with boiling EtOH, and the residue recrystd. from PhNO2 yielded 1.5 g. B (or B') (Ph, H, H) (III), m. 312-15° (corrected). Powdered III (400 mg.) in 10 cc. AcOH treated with 1 cc. 6N CrO3 in AcOH, and the mixture shaken 1 hr., allowed to stand overnight, and poured into 10 cc. water yielded 370 mg. A (Ph, H, H), m. 304-9° (corrected). Powdered II (18 g.) added in 3- to 5-g. portions to 95 cc. Ac2O and 5 cc. H2SO2 at 0°, and the mixture allowed to stand 3 hrs. at room temperature and poured into 10-15 parts ice water yielded 28 g. 2,3,3',6,6'-pentaacetoxy-4,4'-ditolyl (IV), m. 165-6°. IV (19 g.) refluxed 20 min. in 160 cc. N HCl under H and the product concentrated to 50 cc. and dried over KOH yielded 10.5 g. pentahydroxy analog (V) of IV, m. 220-5°. V (10 g.) in 100 cc. hot EtOH cooled, diluted with 200 cc. water, and the filtered solution added portionwise to 50 cc. 3.3N FeCl3 yielded 9 g. A (Me, H, HO) (VI), m. 178-80°; acetate, m. 152-3°; Me ether, m. 102-3°. VI (1 g.) treated at 0° with 6 cc. 5% H2SO4 in Ac2O, the mixture allowed to stand 24 hrs. at room temperature, poured into 10 parts ice water, the air-dried product refrigerated 24 hrs. in 2-3 parts absolute EtOH, and the insol. residue (1.3 g.) dissolved in 25 parts boiling EtOH and slowly cooled yielded 90-130 mg. rearrangement product (VII), m. 213-15°, of VI; the alc. mother liquors from VII diluted with water and the product recrystd. from AcOH yielded 400-500 mg. 1,3,4,5,6(or 8)-pentaacetoxy-2,7-dimethyldibenzofuran (VIII), m. 165°; the first two AcOH mother liquors from VIII poured into cold water yielded 170-250 mg. 2,2',3',6'-tetraacetoxy-4,4'-ditolyl-3,6-quinone (IX), m. 156°. IX (140 mg.) in 1.4 cc. Ac2O treated with 300 mg. powdered Zn and 0.3 cc. pyridine, the mixture heated to boiling until decolorized, filtered, and the filtrate poured into water yielded 150 mg. 2,2',3,3',6,6'-hexaacetoxy-4,4'-ditolyl (X), m. 202-3°. VIII (270 mg.) refluxed 30 min. with 4 cc. N HCl-MeOH, the product dried over KOH, the residue (150 mg. m. 220-5°) dissolved in 2.5 cc. hot EtOH, and the solution cooled and treated first with 2.5 cc. water, then with 0.9 cc. 2.5N FeCl3, yielded 110 mg. 3-hydroxy-2,7-dimethyldibenzofurandiquinone (XI), m. 252-4° (corrected). Powdered XI (50 mg.) dissolved in 1.5 cc. 5% H2SO4 in Ac2O, and the mixture allowed to stand 48 hrs. at room temperature and poured into ice

water yielded 3,5,6,8-tetraacetoxy-2,7- dimethyldibenzofuran-1,4-quinone (XII), m. 225-35° (decomposition). XII (300 mg.) in 0.5 cc. Ac2O containing 30 mg. anhydrous NaOAc treated with 70 mg. powdered Zn, the solution filtered hot, and the combined filtrates added to cold water yielded 1,3,4,5,6,8-hexaacetoxy-2,7-dimethyldibenzofuran (XIII) (hexaacetate of anhydrodihydroxyleucophenicin), m. 255-6°. VI (50 mg.) in 0.5 cc. absolute EtOH refluxed 1 hr. with 0.2 cc. cyclopentadiene and the solution evaporated yielded dicyclopentadiene-2-hydroxy-4,4'-ditoluquinone (XIV), m. 154°. B (or B') (MeO, H, H), m. 269° (corrected) (10 g.), added to 60 cc. 5% H2SO2 in Ac2O at 0° and the mixture allowed to stand 3 hrs. at room temperature yielded 200 mg. 4,4'-dimethoxydiquinone, m. 271-2° (corrected). The filtrate poured into 600 cc. ice water yielded a small amount of 3,3',6,6'-tetraacetoxy- but mostly (7.1 g.) 2,3,3',6,6'-pentaacetoxy-4,4'-dimethoxydiphenyl (XV), m. 196-7°. XV (1.08 g.) in 9 cc. N HCl-MeOH refluxed 40 min. under CO2 and the product distilled and finally dried over KOH yielded 630 mg. pentahydroxy analog (XVI) of XV, m. 194-7°. XVI with 5% H2SO4 in Ac2O yielded XV, m. 196-7°.

IT 124202-23-9
(Derived from data in the 6th Collective Formula Index (1957-1961))

RN 124202-23-9 CAPLUS

CN [1,1'-Biphenyl]-2,2',4,4',5,5'-hexol, 6,6'-dimethyl-, 2,2',4,4',5,5'-hexaacetate (CA INDEX NAME)



L34 ANSWER 34 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1953:59919 CAPLUS Full-text

DOCUMENT NUMBER: 47:59919

ORIGINAL REFERENCE NO.: 47:10172e-f

TITLE: Antiseptics for foods. LV

AUTHOR(S): Fujikawa, Fukujiro; Tokuoka, Akimasa; Kometani, Eishi; Matsubara, Shoji

CORPORATE SOURCE: Kyoto Coll. Pharm.

SOURCE: Yakugaku Zasshi (1953), 73, 688-90
CODEN: YKKZAJ; ISSN: 0031-6903

DOCUMENT TYPE: Journal

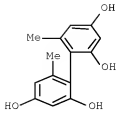
LANGUAGE: Unavailable

AB cf. CA. 47, 4513c. Soy sauce with 0.01% 6-chlorothymol, p-Me2EtCC6H4OH, 2,1-HOC10H6CHO, 3,7-dihydroxy-19-,dimethyldibenzofuran, phenothiazine, 2-methyl-1,4-naphthoquinone, and 2-ethyl-1,4-naphthoquinone prevented the growth of mold for 61 days.

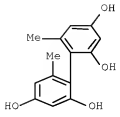
IT 4946-96-7, 4,4'-Biorcinol
(in soy-sauce preservation)

RN 4946-96-7 CAPLUS

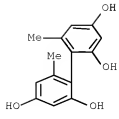
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



L34 ANSWER 35 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1954:1175 CAPLUS Full-text
DOCUMENT NUMBER: 48:1175
ORIGINAL REFERENCE NO.: 48:229f-i,230a
TITLE: Antibacterial activity of some organic compounds in vitro. II. Antibacterial activity of some organic compounds on Micrococcus pyogenes var. aureus, Escherichia coli communior, and Bacillus subtilis
AUTHOR(S): Fujikawa, Fukujiro; Hitosa, Yuhei; Yamaoka, Michiyo; Fujiwara, Yoshiko; Nakazawa, Shozo; Omatsu, Tokugoro; Toyoda, Tadaaki
SOURCE: Yakugaku Zasshi (1953), 73, 135-8
CODEN: YKKZAJ; ISSN: 0031-6903
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The growth-inhibitory action of the following compds. was tested on M. pyogenes var. aureus, E. coli communior, and B. subtilis, in the order named, and the effective dilns. (10,000 dilution = 1) were: (2-HOC6H4)2O, 1, 1, and <1; 2-HOC6H4OC6H4OH-4, 1, 1, and <1; (4-HOC6H4)2O, 1, 1, and 1; 2-HOC6H4OC6H4Me-2, 2, 2, and 1; 2-HOC6H4OC6H4Me-4, 4, 1, and 1; 3-MeC6H4OC6H3(OH)2-2, 5, 4, 1, and 2; 2,5-(HO)2C6H3OC6H4Me-4, 2, 1, and 2; 2,5-Me2C6H3OC6H4OH-4, 8, <1, and 2; 2,4,6-Me(HO)2C6H2OC6H4Me-4, 1, <1, and <1; 2,5,3-Me2(HO)C6H2OPh, 2, 1, and 8; 2,5,3-Me2(HO)C6H2OC6H4OH-2, 1, 1, and 1; 2,5,4,6-Me2(HO)2C6HOC6H4Me-2, 2, 1, and 2; 2,5,4,6-Me2(HO)2C6HOC6H4Me-3, 1, <1, and 1; 2,5,4,6-Me2(HO)2C6HOC6H4Me-4, 1, <1, and 1; 2-HO2CC6H4OPh, 1, 1, and <1; 3-HO2CC6H4OPh, all <1; 2-HOC6H4OC6H4CO2H-2, all <1; 3-HOC6H4OC6H4CO2H-3, 1, 1, and <1; 3-HO2CC6H4OC6H4OH-4, all <1; 3-HO2CC6H4OC6H4OMe-4, all <1; PhOC6H3(OH)CO2H-3,5, all <1; 2-HO2CC6H4OC6H4CO2H-4, all <1; 3,5-HO(HO2C)C6H3OC6H4CO2H-4, all <1; 4-ClC6H4OC6H4OMe-4, all 1; 4-ClC6H4OC6H4OH-4, all 1; (2-HOC6H4)2, all 1; [2,4-(HO)2C6H3]2, 1, 1, and <1; [2,4,6-Me(MeO)2C6H2]2, all <1; [2,4,6-Me(HO)2C6H2]2, 2, 1, and <1; [2,4,5-(HO)2RC6H2]2, R = cyclohexyl, 1, <1, and 1; (4-HO2CC6H4)2, all <1; [2,5,4,6-Me2(HO)2C6H]2, all <1; 2,7-dimethoxy-4,5-dimethyldiphenylene oxide, all <8; 2,7-dihydroxy-4,5-dimethyldiphenylene oxide, <8, <8, and 16; 2,7-dihydroxydiphenylene oxide 4,5-dicarboxylic acid, all <8; the Me ester of the latter, all <8; divaricatic acid, 2, <1, and 16; atranorin, <1, 1, and <1; sekikaic acid, 1, <1, and 4; sphaerophorin, 1, <1, and 16; gyophoric acid, all <8; anziaic acid, all 8; microphyllic acid, all 8; Me lecanorate, all <1; protocetraric acid, all 8; α-collatolic acid, all 8; β-collatolic acid, <8, 8, and <8; collatolon, 16, 8, and <8; stictinic acid, <8, 8, and <8; psoromic acid, all <1; usnolic acid, all <1; Et usnolate, 2, 4, and 4; usnetol, all <1; rangiformic acid, 8, 8, and <8; l-protolichesterinic acid, 8, <1 and 1; agaricinic acid, 1, 1, and <1; sphaerophorol, 8, 1, and 8.
IT 4946-96-7, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl- (antibacterial effects of)
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



L34 ANSWER 36 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1952:61282 CAPLUS Full-text
DOCUMENT NUMBER: 46:61282
ORIGINAL REFERENCE NO.: 46:10286g-i,10287a
TITLE: Effect of some compounds on the tubercle bacilli in vitro. IV
AUTHOR(S): Naito, Masakazu; Shihoda, Akira; Ohta, Masahisa; Fujikawa, Fukujiro; Nakajima, Kunio; Fujii, Hiroshi; Tokuoka, Akimasa; Hitosa, Yuhei
SOURCE: Yakugaku Zasshi (1952), 72, 1047-50
CODEN: YKKZAJ; ISSN: 0031-6903
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. C.A. 46, 4052b. Growth inhibition of Mycobacterium tuberculosis in vitro by the following compds. was tested: phenanthrenequinone (I) and its 9,10-[:NNHC(:NH)NH2.HNO3]2, thymoquinone (II), its 5-[:NNHC(:NH)NH2.HNO3] (III) and 2,5-[:NNHC(:NH)NH2.HNO3]2, toluquinone and its mono- and bis-aminoguanylhydrazone-HNO3, p-benzoquinone (IV) and its monoaminoguanylhydrazone (V) and its mono- and bis-aminoguanylhydrazone-HNO3, 1,4-naphthoquinone (VI), its mono- (VII) and bisaminoguanylhydrazone-HNO3, 2-methyl-1,4-naphthoquinone (VIII), its mono- and bisamino-guanylhydrazone-HNO3, anthraquinone, 2-methylanthraquinone (IX), 2-methyl-5-methoxy-1,4-benzoquinone, 2,7-dihydroxy-4,5-dicarboxydiphenylene dioxide, 2,7-dihydroxy-1,4,5,8-tetramethyldiphenylene dioxide, 2,7-dihydroxy-4,5-dimethyldiphenylene dioxide, 6,6'-dimethyl-2,2',4,4'-tetra-hydroxybiphenyl, and p-H2NO2SC6H4CH:NNHCSNH2 (X); 2,4-HO(H2N)C6H3CO2Na (XI) is used as a control. Compds. I to XI, inclusive, inhibited the growth at the dilution of 1:160,000; II, VI, VIII and XI were effective at the dilution of 1:320,000. Of 42 lichen compds. tested, none showed remarkable growth inhibition except that Me evernate was effective at 1:80,000, while atranorin, Me and Pr lecanaorate, and iso-Bu and Am evernate were effective at 1:40,000. 2,4-HO(H2N)C5H3CO2Ph was effective at 1:600,000-1:640,000.
IT 4946-96-7, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl-
(effect on tubercle bacilli)
RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)

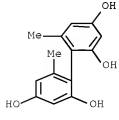


L34 ANSWER 37 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1951:39034 CAPLUS Full-text
DOCUMENT NUMBER: 45:39034
ORIGINAL REFERENCE NO.: 45:6692b-d
TITLE: Antibacterial effects of lichen substances. II. Antibacterial effects of didymic acid and its related compounds
AUTHOR(S): Shibata, Shoji; Miura, Yoshiaki; Sugimura, Hisako; Toyoizumi, Yuri
CORPORATE SOURCE: Univ. Tokyo
SOURCE: Yakugaku Zasshi (1948), 68, 303-5
CODEN: YKKZAJ; ISSN: 0031-6903
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Antibacterial effects of didymic acid and strepsilin of the dibenzofuran group of lichen substances and their derivs. were examined The antibacterial power of didymic acid is controlled by its dibenzofuran ring, its OH group, and the number of C atoms in its alkyl group. The strongest antibacterial power in lichen substances and their derivs. was shown by decarboxynordidymic acid (I). The highest dilns. inhibiting growth of M. tuberculosis (avian type) and Staph. aureus, resp., were: strepsilin < 1:10,000, < 1:5,000; didymic acid 1:40,000, 1:80,000; I 1:320,000, 1:640,000; diacetate of I -, < 1:5,000; 1,9-dimethyl-3,7-dihydroxydibenzofuran 1:80,000, 1:80,000; 1-methyl-3,7-dihydroxydibenzofuran -, 1:40,000; 3,7-dihydroxydibenzofuran 1:10,000, 1:5,000; 1,4,6,9-tetramethyl-3,7-dihydroxydibenzofuran <1:10,000, <1:5,000; dibenzofuran -, < 1:5,000; 1,9-dimethyl-3,7-dimethoxydibenzofuran -, < 1:5,000; 6,6'-dimethyl-2,2',4,4'-tetrahydroxybiphenyl -, 1:5,000; orcinol -, < 1:5,000; olivetol 1:10,000, 1:10,000; sphaerophorol 1:40,000, 1:40,000.

IT 4946-96-7, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl-
(antibacterial effects of)

RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



L34 ANSWER 38 OF 39 CAPLUS COPYRIGHT 2008 ACS on STN

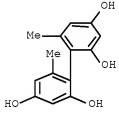
ACCESSION NUMBER: 1951:41441 CAPLUS Full-text
DOCUMENT NUMBER: 45:41441
ORIGINAL REFERENCE NO.: 45:7100d-i,7101a-d
TITLE: Didymic acid, a new kind of lichen substance
AUTHOR(S): Shibata, Shoji
CORPORATE SOURCE: Imperial Univ., Tokyo
SOURCE: Acta Phytochimica (1944), 14, 9-38
CODEN: APCJA8; ISSN: 0365-5393
DOCUMENT TYPE: Journal
LANGUAGE: German

AB Concentration of the Et2O extract of 1500 g. of a mixture of Cladonia species yielded, successively, 1.5 g. squamatic acid, 2 g. barbat(in)ic acid, and 1.7 g. didymic acid (I). I, C22H26O5, recrystd. from petr. ether, m. 172-3° (decomposition), develops colors as follows: FeCl3, blue; CaCl2 on crystals moist with EtOH, blue-green; concentrated H2SO4, yellow to green on warming. It is readily soluble in aqueous NaOH, EtOH, Et2O, and Me2CO, difficultly soluble in aqueous Na2CO3 or NaHCO3, AcOH, C6H6, or petr. ether. With Ac2O and C5H5N, it yields I acetate, colorless needles, m. 116°. With CH2N2 in Et2O, it gives colorless prisms, m. 109°. I (100 mg.), melted at 200° and vacuum-distilled at 0.015 mm. Hg and 210-50°, gave 50 mg. decarboxydidymic acid (II), m. 81-2° (petr. ether), gives no color with FeCl3 and a blue-green color with CaCl2-EtOH, is soluble in most organic solvents. II (47 mg.), refluxed 2 h. with 2 mL. HI and 1 mL. AcOH, the solution poured into ice H2O, and the precipitate filtered and recrystd. from petr. ether-C6H6, gave 10 mg. decarboxynordidymic acid (III), m. 120°. III (20 mg.) kept overnight in 0.5 mL. C5H5N and 1 mL. Ac2O, precipitated in H2O, and recrystd. from dilute aqueous EtOH, colorless needles, m. 60-1°, soluble in C6H6, EtOH, and petr. ether. I (200 mg.) was added in portions to 6 g. KOH, 0.4 g. Zn dust, and 4 drops H2O, the temperature raised from 160 to 250° in 15 min., held 10 min. at 250-70° and 5 min. at 270-310°, the melt dissolved in H2O, acidified with HCl, extracted with Et2O, the Et2O extract shaken with aqueous Na2CO3, taken to dryness, and the residue recrystd. from H2O, giving 10 mg. C20H26O4, m. 155-6°, soluble in aqueous NaOH (red solution), EtOH, Et2O, and Me2CO, less soluble in hot H2O and C6H6. 3,5-(MeO)2C6H3Pr (IV) (1.5 g.) (C.A. 30, 6351.9) and 2.1 g. iodine in 50 mL. Et2O, treated with 1.5 g. HgO, shaken 7 h. for complete decolorization, filtered, washed with NaHSO3, KI, and KOH solns., and evaporated gave 0.9 g. 2,3,5-I(MeO)2C6H2Pr (V), oil, b8 150-60°. V (1 g.) and 2.5 g. Cu powder, heated 5 h. at 210-20° in a sealed tube, extracted with hot Me2CO, and the Me2CO-free residue distilled, gave 0.2 g. IV, b4 140-60°, and 0.1 g. 2,2'-dipropyl-4,4',6,6'-tetramethoxybiphenyl (VI), b0.06-0.08 200-10°. VI (0.1 g.) was demethylated with HI to 2,2'-dipropyl-4,4',6,6'-tetrahydroxybiphenyl, easily soluble in EtOH, gives no color with FeCl3 and a fugitive violet-red color with CaCl2-EtOH. 2,2'-Dimethyl-4,4',6,6'-tetramethoxybiphenyl (VII) (8 g.), heated 6 h. on an oil bath with 58 mL. HI and a little red P, gave 2 g. 4,5-dimethyl-2,7-dihydroxydibenzofuran (VIII) and 4.5 g. 2,2'-dimethyl-4,4',6,6'-tetrahydroxybiphenyl, yellow leaflets from PhNO2, m. 232-3°. VII (4 g.) heated 4 h. on an oil bath with 75 mL. HI gave only VIII, colorless leaflets, m. 243°, soluble in Et2O and Me2CO, insol. in H2O. VIII (3.5 g.), refluxed 5 h. with 10 mL. Me2SO4 in 50 mL. Me2CO and 20 g. K2CO3, gave 2.6 g. 4,5-dimethyl-2,7-dimethoxydibenzofuran (IX), colorless leaflets, m. 157°, gives no color with FeCl3 and CaCl2. IX (0.1 g.) in 10 mL. C5H5N, treated 6 h. with 0.25 g. KMnO4 in 10 mL. H2O on a boiling water bath, gave 0.05 g. 5-methyl-2,7-dimethoxy-4-dibenzofurancarboxylic acid, colorless needles, m. 181°, easily soluble in EtOH (blue fluorescence). IX (0.3 g.) in 10 mL. C5H5N, treated 15 h. with 3 g. KMnO4 in 75 mL. H2O on a boiling water bath, gave 0.07 g. 2,7-dimethoxy-4,5-dibenzofurandicarboxylic acid (X), m. 321-2° (decomposition) (from p-dioxane), readily soluble in EtOH, less soluble in Et2O, shows intense blue fluorescence. X with CH2N2 gave X di-Me ester,

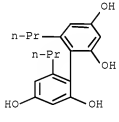
yellowish prisms, m. 188.5-9.5° (from EtOH), readily soluble in Et2O, shows blue fluorescence. II (0.11 g.), refluxed 3 h. in 40 mL. Me2CO with 4 g. K2CO3 and 2 mL. Me2SO4, gave decarboxydidymic acid Me ether (XI), m. 31°. XI treated 13 h. in C5H5N on a water bath with aqueous KMnO4 gave 0.02 g. yellow needles, m. 323° (decomposition) (from p-dioxane), mixed m.p. with authentic X, 322° (decomposition). The mixed m.ps. of X di-Me esters was also not depressed. I Me ether Me ester, m. 109° (0.1 g.), in 5 mL. C5H5N, refluxed 5 h. with 0.8 g. KMnO4 in 20 mL. H2O, gave 0.02 g. yellow needles, m. 136° (from dilute p-dioxane) of 5-propyl-2,7-dimethoxy-3,4-dibenzofurandicarboxylic acid 3-mono-Me ester (XII), readily soluble in EtOH, Me2CO, Et2O, and p-dioxane, less soluble in petr. ether, shows no fluorescence. Saponification of XII and recrystn. of the product from petr. ether-p-dioxane gave the free dicarboxylic acid, m. 209-10° (decomposition), readily soluble in p-dioxane and EtOH, difficultly soluble in petr. ether and H2O. XII and CH2N2 gave di-Me ester, yellow prisms, m. 130-1° (from petr. ether). Didymic acid is 4-amyl-5-propyl-2-hydroxy-7-methoxy-3-dibenzofurancarboxylic acid.

IT 4946-96-7P, 2,2',4,4'-Biphenyltetrol, 6,6'-dimethyl-
854243-85-9P, 2,2',4,4'-Biphenyltetrol, 6,6'-dipropyl-
RL: PREP (Preparation)
(preparation of)

RN 4946-96-7 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dimethyl- (CA INDEX NAME)



RN 854243-85-9 CAPLUS
CN [1,1'-Biphenyl]-2,2',4,4'-tetrol, 6,6'-dipropyl- (CA INDEX NAME)



L34 ANSWER 39 OF 39 WPIX COPYRIGHT 2008 THOMSON REUTERS on STN
ACCESSION NUMBER: 2005-522497 [53] WPIX
DOC. NO. CPI: C2005-158513 [53]
TITLE: Heat shock protein-90 inhibitor for treating e.g. malignant tumors, contains benzene derivative, or its prodrug or salt, as active ingredient
DERWENT CLASS: B05

INVENTOR: KAJITA J; KANDA Y; KITAMURA Y; NAKAGAWA H; NAKASHIMA T; NAKATSU R; NARA S; SHIOTSU Y; SOGA S; KITAMURA Y H K; NAKATSU R H K
PATENT ASSIGNEE: (KYOW-C) KYOWA HAKKO KOGYO KK
COUNTRY COUNT: 107

PATENT INFO ABBR.:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2005063222	A1	20050714	(200553)*	JA	311[1]	
EP 1704856	A1	20060927	(200663)	EN		
US 20070155813	A1	20070705	(200746)	EN		
JP 2005516721	X	20070719	(200749)	JA	275	

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2005063222	A1	WO 2004-JP19742	20041224
EP 1704856	A1	EP 2004-808092	20041224
EP 1704856	A1	WO 2004-JP19742	20041224
US 20070155813	A1	WO 2004-JP19742	20041224
US 20070155813	A1	US 2006-584234	20060626
JP 2005516721	X	WO 2004-JP19742	20041224
JP 2005516721	X	JP 2005-516721	20041224

FILING DETAILS:

PATENT NO	KIND		PATENT NO	
EP 1704856	A1	Based on	WO 2005063222	A
JP 2005516721	X	Based on	WO 2005063222	A

PRIORITY APPLN. INFO: JP 2003-432776 20031226
AN 2005-522497 [53] WPIX
AB WO 2005063222 A1 UPAB: 20051223
NOVELTY - Heat shock protein-90 (Hsp90) inhibitor contains a benzene derivative (I), or its prodrug or salt, as an active ingredient.

DETAILED DESCRIPTION - A heat shock protein-90 (Hsp90) inhibitor contains a benzene derivative of formula (I), or its prodrug or salt, as an active ingredient.

n = 0-10;

R1 = H, OH, CN, COOH, nitro, halo, optionally substituted lower alkyl, lower alkenyl, lower alkynyl, cycloalkyl, lower alkoxycarbonyl, aroyl, lower alkanoyl, heterocyclic alkyl, aryl, aralkyl, arylsulfonyl, heterocyclyl, -CONR7R8, -NR9R10 or -OR13;

R7 and R8 = H, optionally substituted lower alkyl, cycloalkyl, lower alkanoyl, aryl, heterocyclyl, aralkyl, heterocyclic alkyl or aroyl, or R7 and R8 form optionally substituted heterocyclyl with adjacent nitrogen atom;

R9 and R10 = H, optionally substituted lower-alkyl sulfonyl, lower alkyl, cycloalkyl, lower alkanoyl, aryl, heterocyclyl, aralkyl, heterocyclic alkyl, aroyl or -CONR11R12, or R9 and R10 combine with adjacent nitrogen atom to form heterocyclyl;

R11 and R12 = as R7;

R13 = optionally substituted lower alkyl, lower alkenyl, lower alkanoyl, aryl, heterocyclyl, aralkyl or heterocyclic alkyl;

R2 = optionally substituted lower alkyl, lower alkenyl, lower alkynyl, aryl or heterocyclyl (excluding optionally substituted pyrazolyl);

R3 and R5 = H, optionally substituted lower alkyl, lower alkenyl, lower alkanoyl, cycloalkyl, lower-alkyl sulfonyl, arylsulfonyl, mono/di-lower-alkyl aminocarbonyl, lower alkoxycarbonyl, heterocyclic carbonyl, aralkyl or aroyl, carbamoyl or sulfamoyl;and

R4 and R6 = H, OH, halo, CN, nitro, optionally substituted lower alkyl, lower alkenyl, lower alkynyl, lower alkoxy, cycloalkyl, lower alkoxycarbonyl, aryloxy, aryl, heterocyclyl (excluding optionally substituted pyrazolyl), lower alkanoyl, aralkyl or heterocyclic alkyl, or amino, mono/di-lower alkyl amino or COOH.

INDEPENDENT CLAIMS are also included for the following:

(A) a benzene derivative of formula (IA) or its salt;

(B) a pharmaceutical containing the benzene derivative (IA) or its salt as an active ingredient;

(C) a Hsp90 inhibitor containing the benzene derivative (IA) or its salt as an active ingredient;

(D) a therapeutic agent of disease accompanied by Hsp90 using the benzene derivative (IA) or its salt as an active ingredient;

(E) an antitumor agent containing the benzene derivative (IA) or its salt as an active ingredient;

(F) inhibition of Hsp90 by administering the benzene derivative or (IA), its prodrug or salt; and

(G) use of the benzene derivative (I) or (IA), its prodrug or salt for the manufacture of the inhibitor or antitumor agent.

R2A = optionally substituted aryl or aromatic heterocyclyl (excluding optionally substituted pyrazolyl);

R3A and R5A = H, carbamoyl, sulfamoyl optionally substituted lower alkyl, lower alkenyl, lower alkanoyl, lower-alkyl sulfonyl, mono/di-lower alkyl aminocarbonyl, lower alkoxycarbonyl, heterocyclic carbonyl, aralkyl or aroyl;

R4A = H, OH or halo;and

nA = 0-5.

(1) When nA is 0, R1A is H, CH3, OH, OCH3, COOH, methoxycarbonyl, carbamoyl, -CONHCH3, -CON(CH3)2, -CONHCH2Ph, -CH(OCH3)Ph, propionyl, benzoyl, dioxolanyl, optionally substituted vinyl or propa-1-en-1-yl (where Ph is phenyl). When R1A is H, R6A is optionally substituted lower alkyl. When R1A is CH3, OH, OCH3, COOH, methoxycarbonyl, carbamoyl, -CONHCH3, -CON(CH3)2, -CONHCH2Ph, propionyl, benzoyl, dioxolanyl, optionally substituted vinyl or propa-1-en-1-yl, R6A is halo.

(2) When nA is 1-5, R1A is OH, CN, COOH, halo, optionally substituted lower alkyl, lower alkenyl, lower alkynyl, cycloalkyl, lower alkanoyl, lower alkoxycarbonyl, aryl, aroyl, heterocyclic alkyl, aralkyl, arylsulfonyl or heterocyclyl, -CONR7 R8, -NR9R10 or -OR13, R6A is H, halo, CN, nitro, amino, mono/di-lower alkyl amino, COOH, optionally substituted lower alkyl, lower alkenyl, lower alkynyl, lower alkoxy, cycloalkyl, lower alkanoyl, lower alkoxycarbonyl, aryloxy, aryl, heterocyclyl (excluding optionally substituted pyrazolyl), aralkyl or heterocyclic alkyl.

(a) When R3A and R5A are isopropyl, R6A is not H.

(b) When R3A and R5A are methyl, R6A is not H, Br, ethyl, 1-hydroxyethyl, 1-(dimethylamino)ethyl, vinyl or COOH.

(c) When R4A and R6A are H, and R3A and R5A are tert-butyl or benzyl, -(CH2)nAR1A is not the group chosen from hydroxymethyl and 2-chloro allyl.

(d) When R4A and R6A are H, R3A is benzyl or acetyl and R5A is methyl, or when R3A, R4A and R6A are H and R5A is CH3, -(CH2)nAR1A is not 2-(acetyl amino) propyl and 2-(substitution lower alkanoyl amino) propyl.

(e) When R3A-R5A are H and R6A is COOH, or when R4A, R5A and R6A are H and R3A is CH3, -(CH2)nAR1A is not n-pentyl.

(f) When R3A and R4A are H, and R5A is CH3 and R6A is ethyl, -(CH2)nAR1A is not n-propyl.

(g) When R3A is CH3, R4A and R6A are H and R5A is 4-methoxy benzyl, -(CH2)nAR1A is not -(CH2)3CH=CH2 and -(CH2)5CH=CH2.

(h) When R3A-R6A are H and -(CH2)nAR1A is (1) n-pentyl, R2A is not 2,4-dihydroxy-6-pentylphenyl, (2) n-hexyl, R2A is not 4,6-di(substituted phenyl)triazole-2-yl or 3,6-di (substituted phenyl)-1,2,4-triazine-5-yl, or (3) n-heptyl, R2A is not a substituted triazolyl.

(i) When R3A is H or acetyl, R5A is methyl, and R4A and R6A are H and -(CH2)nAR1A is ethyl or 11-propyl, R2A is not 2-amino pyrimidine-4-yl which has a substituent in 5-th position.

(j) R3A-R5A are H, when R6A is OCH3 and -(CH2)nAR1A is 3-methyl picryl-en-1-yl or 3-hydroxy-3- methylbutyl, R2A is not 7-hydroxy-4-oxo-4H-1-benzopyran-3-yl or 6-methoxy-2,2-dimethyl-2H-1-benzopyran-8-yl.

ACTIVITY - Cytostatic.

Human breast cancer derived KPL-4 cell proliferation inhibiting effect of 3,5-dihydroxy -2-phenyl methyl phenyl acetate (Ia) was evaluated. (Ia) showed 50% cell growth inhibition activity (GI50) of 50 micronsol or less.

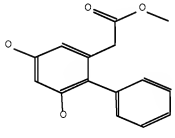
MECHANISM OF ACTION - HSP-Antagonist-90.

Human N terminal recombinant Hsp90 protein was prepared according to method specified in (Cell), 89, 239-250 (1997). 3,5-dihydroxy -2-phenyl methyl phenyl acetate showed 30% or more binding with Hsp90 protein of biotinated Radicicol at concentration of 10 micronsol or less and inhibited Hsp90.

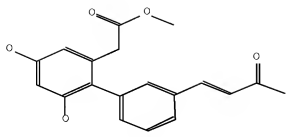
USE - For treating diseases (accompanied by Hsp90 protein) e.g. malignant tumors (claimed), hematopoietic tumors (lymphomas), solid tumors (e.g. breast cancer), leukemia and multiple myeloma.

ADVANTAGE - The benzene derivative effectively inhibits Hsp protein and provides excellent antitumor effect.

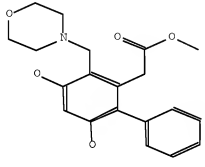
AN.S DCR-1110308
CN.S (4,6-Dihydroxy-biphenyl-2-yl)-acetic acid methyl ester
SDCN RAIKDK



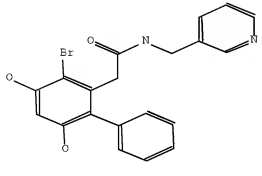
AN.S DCR-1110309
CN.S [4,6-Dihydroxy-3'-((E)-3-oxo-but-1-enyl)-biphenyl-2-yl]-acetic acid methyl ester
SDCN RAIKDL



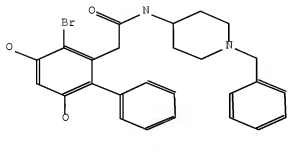
AN.S DCR-1110310
CN.S (4,6-Dihydroxy-3-morpholin-4-ylmethyl-biphenyl-2-yl)-acetic acid methyl ester
SDCN RAIKDM



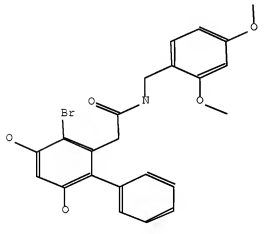
AN.S DCR-1110311
CN.S 2-(3-Bromo-4,6-dihydroxy-biphenyl-2-yl)-N-pyridin-3-ylmethyl-acetamide
SDCN RAIKDN



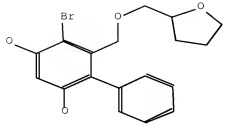
AN.S DCR-1110312
CN.S N-(1-Benzyl-piperidin-4-yl)-2-(3-bromo-4,6-dihydroxy-biphenyl-2-yl)-acetamide
SDCN RAIKDO



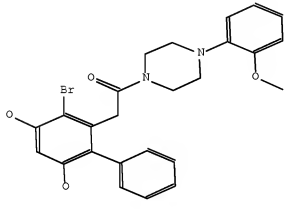
AN.S DCR-1110313
CN.S 2-(3-Bromo-4,6-dihydroxy-biphenyl-2-yl)-N-(2,4-dimethoxy-benzyl)-acetamide
SDCN RAIKDP



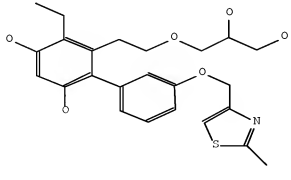
AN.S DCR-1110314
CN.S 5-Bromo-6-(tetrahydro-furan-2-ylmethoxymethyl)-biphenyl-2,4-diol
SDCN RAIKDQ



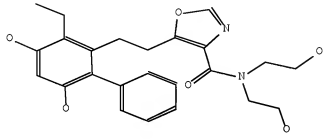
AN.S DCR-1110315
CN.S 2-(3-Bromo-4,6-dihydroxy-biphenyl-2-yl)-1-[4-(2-methoxy-phenyl)-piperazin-1-yl]-ethanone
SDCN RAIKDR



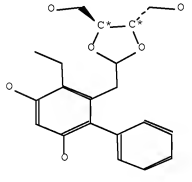
AN.S DCR-1110316
CN.S 6-[2-(2,3-Dihydroxy-propoxy)-ethyl]-5-ethyl-3'-(2-methyl-thiazol-4-ylmethoxy)-biphenyl-2,4-diol
SDCN RAIKDS



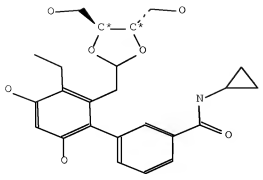
AN.S DCR-1110317
CN.S 5-[2-(3-Ethyl-4,6-dihydroxy-biphenyl-2-yl)-ethyl]-oxazole-4-carboxylic acid bis-(2-hydroxy-ethyl)-amide
SDCN RAIKDT



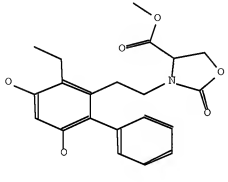
AN.S DCR-1110318
CN.S 6-((4S,5S)-4,5-Bis-hydroxymethyl-1,3-dioxolan-2-ylmethyl)-5-ethyl-biphenyl-2,4-diol6-((4S,5S)-4,5-Bis-hydroxymethyl-[1,3]dioxolan-2-ylmethyl)-5-ethyl-biphenyl-2,4-diol
SDCN RAIKDU



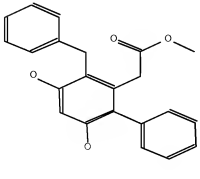
AN.S DCR-1110319
CN.S 2'-((4S,5S)-4,5-Bis-hydroxymethyl-1,3-dioxolan-2-ylmethyl)-3'-ethyl-4',6'-dihydroxy-biphenyl-3-carboxylic acid cyclopropylamide2'-((4S,5S)-4,5-Bis-hydroxymethyl-[1,3]dioxolan-2-ylmethyl)-3'-ethyl-4',6'-dihydroxy-biphenyl-3-carboxylic acid cyclopropylamide
SDCN RAIKDV



AN.S DCR-1110320
CN.S 3-[2-(3-Ethyl-4,6-dihydroxy-biphenyl-2-yl)-ethyl]-2-oxo-oxazolidine-4-carboxylic acid methyl ester
SDCN RAIKDW



AN.S DCR-1110322
CN.S (3-Benzyl-4,6-dihydroxy-biphenyl-2-yl)-acetic acid methyl ester
SDCN RAIKDY



```
=> d his nofil

     (FILE 'HOME' ENTERED AT 11:11:09 ON 24 DEC 2008)

     FILE 'REGISTRY' ENTERED AT 11:11:16 ON 24 DEC 2008
L1                STR
L2              5 SEA SSS SAM L1
L3            869 SEA SSS FUL L1
                  SAVE TEMP L3 NIZAL234/A

     FILE 'CAPLUS' ENTERED AT 11:18:56 ON 24 DEC 2008
L4            357 SEA SPE=ON  ABB=ON  PLU=ON  L3
L5              2 SEA SPE=ON  ABB=ON  PLU=ON  US200!-584234/APPS
L6              1 SEA SPE=ON  ABB=ON  PLU=ON  L4 AND L5
                  D SCA TI
                  D SCA TI L5

     FILE 'REGISTRY' ENTERED AT 11:19:30 ON 24 DEC 2008
L7                STR L1
L8              1 SEA SUB=L3 SSS SAM L7
                  D SCA
L9             15 SEA SUB=L3 SSS FUL L7

     FILE 'CAPLUS' ENTERED AT 11:25:21 ON 24 DEC 2008
L10             2 SEA SPE=ON  ABB=ON  PLU=ON  L9
L11             1 SEA SPE=ON  ABB=ON  PLU=ON  L10 AND L5

     FILE 'STNGUIDE' ENTERED AT 11:26:25 ON 24 DEC 2008

     FILE 'REGISTRY' ENTERED AT 11:40:14 ON 24 DEC 2008
L12               STR L1
L13            10 SEA SUB=L3 SSS SAM L12
L14           322 SEA SUB=L3 SSS FUL L12
                  D QUE

     FILE 'CAPLUS' ENTERED AT 12:07:22 ON 24 DEC 2008
L15            39 SEA SPE=ON  ABB=ON  PLU=ON  L14
L16             1 SEA SPE=ON  ABB=ON  PLU=ON  L15 AND L6
L17             1 SEA SPE=ON  ABB=ON  PLU=ON  L10 AND L15
L18             2 SEA SPE=ON  ABB=ON  PLU=ON  L17 OR L10
L19            38 SEA SPE=ON  ABB=ON  PLU=ON  L15 NOT L18

     FILE 'WPIX' ENTERED AT 12:08:43 ON 24 DEC 2008
L20             0 SEA SSS SAM L7
L21             0 SEA SSS FUL L7
L22             1 SEA SSS SAM L12
L23            17 SEA SSS FUL L12
L24             3 SEA SPE=ON  ABB=ON  PLU=ON  L23/DCR

     FILE 'BEILSTEIN' ENTERED AT 12:09:51 ON 24 DEC 2008
L25             0 SEA SSS SAM L7
L26             0 SEA SSS FUL L7
L27             3 SEA SSS SAM L12
L*** DEL        1 S L2 FUL
L28            39 SEA SSS FUL L12
L29            18 SEA SPE=ON  ABB=ON  PLU=ON  L28 AND RN/FA
```

```
L30          21 SEA SPE=ON  ABB=ON  PLU=ON  L28 NOT L29
L31           5 SEA SPE=ON  ABB=ON  PLU=ON  L30 AND BABSAN/FA

     FILE 'MARPAT' ENTERED AT 12:11:17 ON 24 DEC 2008
L32          50 SEA SSS SAM L7
L33          14 SEA CSS SAM L7

     FILE 'CAPLUS' ENTERED AT 12:21:07 ON 24 DEC 2008
                D QUE L18
                D L18 IBIB ABS HITSTR TOT
                D QUE L19

     FILE 'WPIX' ENTERED AT 12:21:49 ON 24 DEC 2008
                D QUE L24

     FILE 'CAPLUS, WPIX' ENTERED AT 12:21:54 ON 24 DEC 2008
L34          39 DUP REM L19 L24 (2 DUPLICATES REMOVED)
                      ANSWERS '1-38' FROM FILE CAPLUS
                      ANSWER '39' FROM FILE WPIX
                D L34 IBIB ABS HITSTR TOT
```